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— mala opinio bene parta delectet —

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AUSTRALID 'ASSIMILATION'

By STANLEY D. PORTEUS

Introduction

The march of events in the world of today has made inevitable a flare-up of scientific interest in the aboriginal Australians, better known as Australids. At the turn of the century the work of a biologist of Melbourne University, Professor Sir Baldwin Spencer, in collaboration with a former police magistrate, F. J. Gillen, brought to scientific attention the life and customs of the Arunta (Aranda) people. Their publications cover a period of field work from 1894 to 1927. Still earlier were studies done by A. C. Haddon in the Torres Strait area off North Queensland, culminating in the Cambridge Expedition to that area. But, though names such as Rivers, Seligman, Wilkin, Myers and McDougall headed the various expedition reports, the enquiries referred not to Australian aborigines as such but to island groups especially open to blood mixtures and diffusion of ideas from New Guinea.

The psychological data referred mainly to sensory phenomena, so that my own work in the Kimberley and Central Australian regions in 1929 represented the first serious attempt to obtain objective measures of Australid mentality. The test most acceptable to the aborigines proved to be the Porteus Maze, though several others, such as form boards, block design and cube imitation, were also, though none too successfully, applied. The tendency of anthropologists and other critics was to write off the results of the Maze Test as kindergarten and baby plays of little significance. The demonstration of the rather peculiar sensitivity of this test to brain damage in the frontal lobes, to ataractic drugs, and of its usefulness as a measure of simple industrial competency and self-management was as yet far in the future, nor was there any body of comparative data as regards other primitive peoples. For these or other reasons there was a long gap unfilled by similar psychological effort in Australia extending to 1962, a period of thirty-three years.

But if experimental data were lacking, there was no dearth of bitter debate as to the reality and significance of racial differences, with very belated recognition of the fact that the key to the whole problem migh easily be found through a repetition or supplementation of studies of the Australids. Anthropologists generally regarded Australids as a "race." If mental differences between them and others could be demonstrated, then the question was settled.

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After instancing how the Australian platypus had contributed to the study of biological evolution, Spencer and Gillen (1927) had remarked that "so does the aboriginal show us, at least in broad outline, what early man must have been like before he learned to read and write, domesticate animals, cultivate crops and use a metal tool. It has been possible to study in Australia human beings that still remain on the culture level of men of the Stone Age."[1]

One would have thought that, when this was so clearly pointed out thirty-six years ago, the opportunity for such study would have been eagerly accepted by scientists both in Australia and elsewhere. Actually, a great deal of work has been done but with singularly little application to the problem as Spencer and Gillen stated it; namely, to show us what the Australid is like. Now, as described in this article, a movement is on foot to bring about for the natives a type of assimilation with whites that most probably will entail the rooting up of aboriginal customs and so many other changes in the Australid way of life that will sound the death knell for any such studies.

However, the Human Genetics Fund has given generous support towards at least two attempts to salvage something from Time's wreckage. In 1962 it sponsored an effort to replicate and extend work previously done in Central Australia. This was reported recently by Porteus and Gregor (1963), the study having been done among the Wailbri, or Walpari as spelled by Spencer and Gillen (1927), or Walbiri (modern anthropological orthography).

But with vision rather rare in these days of controversy, the Human Genetics Fund has already given assurance of further support, making it possible for Professor T. D. Campbell to complete production of color films portraying the technical skills and planning used by contemporary Stone Age workmen.

A single paragraph is sufficient, I think, to demonstrate the value of these films. In Europe and elsewhere when Stone Age tools are unearthed, archaeologists can only infer or guess at their use in making the wooden implements or weapons that must have made up the greatest proportion of their material culture. These implements have long ago mouldered away into dust. But these pictures show a Stone Age people actually using their stone tools to fashion the common wooden implements that made survival possible. Looking at a stone adze gives but little idea of its detailed usages—the tricks of the trade of the workman, so to speak. Structure, no matter how imaginatively studied, will give only a sketchy idea of function unless we can actually see the product of action. It is like studying a machine lathe and trying

[1] See the Preface to *The Arunta: A Study of a Stone Age People*, Vol. I, by B. Spencer and F. J. Gillen, Macmillan, London, 1927.

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to imagine what the machine turned out. Similarly, a deaf and dumb scientist, with the utmost possible knowledge of the anatomy of the larynx and vocal cords, would surely have but a dim idea of human speech and its values.

In another educational field, the Human Genetics Fund has made possible the filmed representation of the operation of a learning device with Australian aboriginals as subjects. This will be described in a later article.

THE ASSIMILATON PROJECT

Two most important considerations, one a matter of national policy, the other of comparative cultural status, make it desirable to review for the benefit of social scientists the factors that affect the attitudes of the Australid people today, and which may determine their future.

Whether wisely or otherwise, the present government of the Commonwealth of Australia,[2] through its Department of Territories, has embarked on a policy of attempted assimilation of aborigines and the white population. A vital part of this policy is the granting of full citizenship to all natives. This will entail not only the right to vote but also the assumption of other responsibilities. It will include not only increased self-dependence but also living up to the duties of citizenship, including compulsory school attendance, and self-management as regards purchase, sale and consumption of alcoholic liquor, previously restricted as regards aboriginals. Obviously, the official machinery for carrying out such a policy is very far from complete. Compromises must be worked out in relation to many matters involving differences in social and sexual regulations of conduct, cooperation with Mission work, and the necessary supplementation of educational and socializing efforts. The feeling seemed to be that a definite policy, even if defective in some respects, was better than the present methods of haphazard adjustment. In the meantime, many believe that the inherent difficulty of the plan will be far better appreciated if people elsewhere obtain a more realistic view of conditions that determine life in the Australian interior, surely one of the most repressive on earth.

Before attempting such a picture, a word as to the social background of what may prove to be another "noble experiment" is advisable. The basis of this movement is basically a change in the popular image of the "black-fellow," as the aboriginal is popularly called by most white Australians.

[2] A pending General Election throughout the continent of Australia may change the political picture very considerably. At the time of the writer's visit to Central Australia in September 1963, the Menzies Government was in power.

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At one time, the idea of the extremely low position of the Australid in any scale of intelligence, social status, industrial or artistic development, or material culture, was so prevalent that it could well be described as general. Possibly because this apparent degradation was reflected in popular accounts, many anthropologists, sociologists and biologists accepted the idea that Australid standing could be considered the nadir of human evolution. Their art was considered negligible, their material culture the simplest, their social regulations and beliefs almost childish, and their intelligence of the lowest order. Not infrequently when popular writers wished to express the greatest possible extremes in human standing they would say "as different as a Harvard professor is from an Australian Bushman."

The comparison was misleading on two counts. In the first place, the Harvard professor did not necessarily represent the apex of all-round intelligence nor the Australian aboriginal its lowest point; in the second place, a Bushman is a native of South Africa, not Australia. Spelt with a small letter, "bushman" is a rather laudatory term applied to a man, white or black, who proves himself self-sufficient to the greatest possible degree in adjusting himself to life in the great Australian "outback," where the hazards of survival are manifold.

But now, at least in his native land, the image of the "black-fellow" has suffered a great change. The present writer has been accorded by some anthropological and psychological authorities a rather large share in establishing in students' minds a better appreciation of the level of tested intelligence occupied by the Australid. I was the first to attempt the application of modern psychological measuring devices to Australid groups. One at least of these measures, the Porteus Maze Test, was found to have remarkable acceptance by natives, and indicated a level of performance in the middle ranges of primitive peoples, much superior to Bushmen of South Africa, Malayan coastal dwellers, jungle tribes in India, and so on—more on a par with Tamils, Chamorros and unschooled Bantu groups, but somewhat below American Indians.

This experimental work was done in Central and Northwest Australia from 1929 onwards and results were reported by me in 1931.[3] A third of a century later this original testing was supplemented by work in Central Australia by Dr James Gregor, under my direction. At that time new forms of the test were used and subjected to more modern scoring methods. These results have been reported by Porteus and Gregor (1963), the publication listing reviews and a bibliography of the most significant comparative studies in this field. Porteus and Gregor confirm previous findings,

[3] See *The Psychology of a Primitive People,* Arnold, London: Longmans Green, New York, 1931.

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and with revised forms and application of the measures have established a somewhat higher performance level for Australids in Central Australia.

Besides these test performances, the writer in his earlier book had discussed many of the specially devised expedients of the Australid race, which possessed for their peculiar environment decided adaptive values favorable to survival. Many social devices, such as old man government, very severe initiatory practices, such as circumcision and subincision, various tough restrictions, such as marriage regulation by sectioning and subsectioning of the groups, and totemic practices, were shown to have a group-cohesion effect favorable to survival. Such values had not been previously emphasized.

As to the myth of extreme simplicity of law and social inheritance, the first destructive blows against the idea had been delivered by Spencer and Gillen, whose monumental studies were extended by a whole generation of anthropologists, mainly trained and led by Professor Elkin of Sydney. The labors of these social anthropologists were supplemented by years of work by a group of men from Adelaide University, representing different scientific disciplines, who with meagre support and a minimum of recognition have added greatly to our knowledge of the technical skills, food gathering and other aspects incidental to the daily life of the aborigines. Among these workers the names of Cleland, Campbell, Fry, Tindale, Strehlow and Wood Jones stand out prominently, while Campbell, Mountford and Barrett have contributed photographic records that can never be duplicated.

Against this record of long and steady accomplishment the work of visitors, such as myself and various other workers from outside Australia, must be regarded in diminished perspective. We did not suffer the heat and burden of the day, even though the efforts of earlier times involved hardships or difficulties unknown to the present-day field worker. Transport over Central Australian "tracks," scarcely to be dignified by the name of roads, summer temperatures as high as 120 degrees in the shade, camping facilities of the roughest, difficulties in making and keeping contact with nomadic groups, together constituted a wide sampling of pioneer hardships in a region a thousand miles and more from their University classrooms. All this evinced a realization on the part of these men that the opportunity of collecting such records was rapidly passing, and once gone could never be recovered.

But records of aboriginal achievement buried in learned papers delivered to occasional conferences or published in unimaginative journals had insignificant effects on the popular image of the Australid as compared with the blazoning abroad of the story of one man's extraordinary talent in a most unexpected direction. What was known of Australid art previous to Albert Namatjira's

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success as a water-color artist was limited to cave paintings of no particular excellence found mainly in the extreme north-west of the continent, a region most open to the infusion of ideas from South East Asia. Apart from these paintings, some galleries of petroglyphs, and rectangular designs painted on bark, Australid achievement in art and decoration was considered negligible. Some hints of latent ability indicated by carefully executed ceremonial designs laid down in color on sand were mainly overlooked. This could be readily understood since the designs had secret totemic meanings and were not openly displayed, and in any case desert sand is naturally about the most impermanent artistic medium one could imagine. Similarly, often impressive body decorations, consisting of feathers or vegetable down stuck on with human blood, were displayed for a few hours and did not reappear until the next initiation period. Charcoal, pipe clay and red or yellow ochre were about the only color materials available. In some districts, tree trunks constituted the "canvas" on which to carve totemic representations.

It therefore came as a great shock when an almost untutored Aranda tribesman, after a couple of lessons at the hands of a talented white watercolor artist, Rex Battarbee, suddenly began to produce paintings distinguished by an unfailing color sense, by striking contrasts of diffused light and concentrated shadows and faithfully delineated forms, that together reproduced excellent representations of those Central Australian scenes, the garish beauty of which astonishes the beholder. Notwithstanding the fact that almost any one with a decent color film in his camera can reproduce those scenes, Namatjira's success was phenomenal for, as one artist remarked to the writer, this man reached in one stride the progress in color values and scenic representations that took Europeans a couple of hundred years to achieve.

As soon as Albert's relatives and friends realized that the white man was ready to pay good money in large amounts for the transfer to paper of the colors and shapes of their rather unique environment, they fell to with a will. Soon there were no less than eleven of the Aranda turning out a flood of pictures, ranging from excellent to indifferent, but each of them exhibiting a quality that made them unmistakably aboriginal. This interest, I believe, did not arise from any deep-rooted Australid sense of beauty; yet though the effort was commercially stimulated the paintings did express the artists' pride of ownership. Namatjira, for example, showed a pronounced predilection for depicting scenes from his own totemic boundaries. A prominent feature of his own *achilpa,* or wild cat totemic country, was Mount Sonder, and this appears many times in his pictures and those of his relatives who also took up art.

Tourists and others flocked to Alice Springs, which soon became a center for display and sale of aboriginal paintings.

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Indeed, there was such a demand that the government had to step in to regulate, through its Social Welfare Agency, the disposal of pictures. Namatjira's work soon doubled in value and after his death there was a further notable inflation. Excellent prints were made and distributed in all Australian cities, and soon it became difficult to find any respectable citizen who was not aware of this most astonishing achievement of members of a race who not so long previously had been held in utter contempt. As in most psychological reversals of attitude and opinion, the pendulum swung readily to the opposite extreme. Far greater things are now expected from the native than he can possibly achieve. The danger of overestimation of native ability has not been overlooked by friends of the Australids, who fear that this favorable image may soon be displaced by expressed disappointment.

Albert Namatjira himself provided the most tragic instance of the difficulty, if not the impossibility, of a man living a well balanced existence with one foot in each of two widely diverse cultures involving completely different standards of behavior. As soon as full citizenship was awarded Albert, he was free to spend his money without restriction, which included the purchase and consumption of liquor without legal penalty. He bought a house near Alice Springs that soon became an aboriginal drinking location with a bad reputation for drunken orgies. But while Albert himself was given full civil rights, he was still subject to penalties if he supplied drink to other aborigines. As a good tribesman, tribal observances made his possessions communal as regards his blood brothers. He was then convicted of supplying a fellow artist with liquor and was sentenced to six months' imprisonment, which was commuted to four months' location arrest. This was a great blow to Namatjira's self-respect and pride, and shortly after his release he died.

Strehlow (1961), a life-long friend of Namatjira, born in Hermannsburg of missionary parents, an authority on Arunta (Aranda) language, songs and ceremonies, wrote most sympathetically of this native, his achievements and unfortunate end. He speaks with utmost understanding of "the immense difficulties which confront all Australian aboriginals who attempt, like Albert, to make their way into white Australian society and to acquire the cultural values, the ideals and the forms of social conduct and behavior found in white Australian society." A moment's thought should convince anyone that new cultural values, ideals and forms of social conduct are not acquired easily and often take more than a generation to be worn easily as if to the manner born, and this in spite of wealth and adult education. These forms take early impress and the most favorable environmental conditioning, and even then the rough original material sometimes shows through.

Strehlow also mentioned that the artist "in his last active year

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earned more than £7,000 from his paintings, thereby bringing his gross earnings to an estimated total of perhaps £50,000 [£40,000 sterling or $112,500] since the end of World War II."

For a man of Australid race, with the equivalent of probably less than fifth grade elementary education, this was a very large earned income. But as Strehlow pointedly remarked, the final result of this material success was tragedy. "Namatjira went downhill rapidly. Soon he appeared to be a confirmed alcoholic." His camp at Morris Soak, "a secluded place in the hills a few miles west of Alice Springs," became noted for drunken brawls, culminating in the murder of a young aboriginal woman. Against this background came Albert's conviction followed by his death. According to Strehlow, many people felt that his final disgrace had been a social tragedy for Australia as well. In his words, "its best-known and most gifted aboriginal son had not been able to bridge successfully the gulf that had always remained between himself and the white Australian community."

That Strehlow fully realises the difficulties of inter-racial bridgebuilding is obvious to even the casual reader of his excellent booklet *Nomads in No Man's Land*. It would not, I believe, be ungenerous to underline with more emphasis than he has used some of those admitted perplexities, and to point out one weakness in his presentation. A quotation (p. 5) from Beals and Hoijer seems to repeat a mistake common in many social anthropological writings. He appears to equate race prejudice with consciousness of physical or mental racial differences, and declares any recognition of those differences to be "scientifically quite untenable." This to the writer is a most unscientific statement. Again and again, Strehlow refers to the fact that all aboriginals and part-aboriginals are marked off from the white Australian community by some physical characteristics which determine their social status. I would amend this statement by substituting *partly determine*. Obviously, financial, family, educational, religious, intellectual and even political differences also have a determining influence on social status. Undoubtedly, if all these differences could be obliterated in a community or a people it would mean a perfect, if monotonous, assimilation. But how could this be done? Such an equalizing process would be met with tremendous social resistance. Similarly, racial differences, such as skin color, head form, facial appearances and so on, can only be obliterated by intermarriage on a world-wide scale, and there it would again encounter resistance from different racial quarters. Asiatics, particularly Chinese, and Africans would regard with contempt any social or physical process that would wipe out all their distinguishing marks.

Even though full citizenship were granted to all Australian aborigines, the physical barriers would not thereby be removed.

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Those barriers constitute facts, not prejudice. If all men had been born equally white and equally intelligent, then racio-national problems would have been non-existent. There would have been no differences to quarrel about. Denying the fact of differentiation will not help the problems of human relationships. Yet so many well-meaning people are willing to approve any theoretically desirable goal even if it can be shown to be completely unattainable.

It would seem to me, though it may be a mistaken inference, that Strehlow believes that Namatjira's failure to be assimilated stemmed from the fact that he was an individual singled out for preferential treatment as regards citizenship. Had there been twenty thousand in like case, would that have reduced the complexities of the situation? Since so many of these difficulties are real and presently irremovable, merely multiplying the number of cases would, I think, increase the total perplexity.

Strehlow puts his finger upon one of those perplexities when he appraises the value to the Australid of his own customs, some of which are completely alien to white culture. Among these are the initiation rites that more than anything else perpetuate the aboriginal's social attitudes, especially veneration of his own tribal inheritance. Apparently Strehlow disapproves strongly of the "complete abandonment of the whole of the old aboriginal culture by the new aboriginal citizens" and advocates that "venerated elders of tribal sub-groups should have an advisory share in determining the future of their own people." This point of view is decried by those who think that assimilation must mean complete obliteration of one of the parties to the union.

Just as it takes two to make a quarrel, it would seem that it takes two to make a peace. Similarly, it would appear obvious that the assimilation of two different racial groups depends on mutual readiness to assimilate. But, as we well know, willingness does not imply practical readiness. The vast majority of people favor peace on earth but seem unable to do anything and everything to secure it. They are willing but not ready. Under such circumstances, the best we can hope for is not assimilation but peaceable and productive co-existence.

That seems to be the heart of all the disputes that divide the world on the subject of racial integration or segregation—the readiness of both parties to pursue a common path. Once again I would like to quote Strehlow (p. 57) on this point, with, however, the wish that he had expanded this discriminating paragraph into a chapter:

> We should remember at all times that no matter how much assistance is given to any human being only that human being can take the final steps necessary for his own rehabilitation. All that other men can do is to help his efforts by example, by

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precept and by financial assistance. But the use made of this help depends on the response of the individual to whom it is given.

Finally, dignity cannot be conferred on individuals by Act of Parliament. Whether it be Negro or Australid, white man or colored, readiness to be assimilated surely depends on the individual himself. The goal for all the world, it would seem to me, is rehabilitation, not mass integration. You can bestow civil rights by legislation but not the wisdom to use them.

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Human Genetics and Psychological Differences

By DONALD A. SWAN

Since the pioneer investigations of Galton, Pearson and Thorndike, many careful family and twin studies have been made with more cases, improved technique, and better tests. However, these later studies generally confirm the view that genetic rather than environmental factors are more important in determining individual abilities, aptitudes and traits, and the extent to which they may be developed.[1]

Clark (1956) estimated the heritability of 49 standard anthropometric characters[2] by comparing the within-pair variances for 37 dizygous and 44 monozygous twin pairs. For 45 of the 49 anthropometric traits, the heritability estimates exceeded .50 and sometimes reached .90. These included stature, arm length, facial height, nose breadth and height, and head length, breadth and height.[3] Gates (1946, 1958), in two extensive reviews of the literature on the inheritance of anthropological traits, also concluded "most anthropometric measurements are determined in large measure by heredity."[4]

In a recent study of 50 Swedish families, Alström (1961) found intra-familial correlations in I.Q. for parent-offspring and siblings "of about or slightly over 0.50."[5] Alström also compared his results with 14 other studies conducted from 1927 to 1944 of

[1] Burt, Cyril, and Howard, Margaret, 1957, "The Relative Influence of Heredity and Environment on Assessments of Intelligence," *The British Journal of Statistical Psychology,* Vol. X, Part II, pp. 99-104. Burt, Cyril, 1958, "The Inheritance of Mental Ability," Vol. XIII, No. 1, pp. 1-15. Garrett, Henry E., 1957, "Great Experiments in Psychology," Appleton-Century Crofts, New York, pp. 235-239 and pp. 264-291. Gates, R. Ruggles, 1952, "Genetics and Normal Mental Differences," in *The Biology of Mental Health and Diseases,* Paul D. Hoeber, New York, pp. 277-281.

[2] As defined in R. Martin's *Lehrbuch der Anthropologie,* Vol. I, G. Fischer, Jena.

[3] Clark, Philip J., 1956, "The Heritability of Certain Anthropometric Characters as Ascertained from Measurements of Twins," *American Journal of Human Genetics,* Vol. VIII, No. 1, pp. 49-54.

[4] Gates, R. Ruggles, 1946, *Human Genetics,* Macmillan, New York, pp. 1150-1169. Gates, R. Ruggles, 1958, *Race Crossing* (*Racial Genetics*), Istituto Gregorio Mendel, Rome, pp. 114-119.

[5] Alström, Carl H., 1961, "A Study of Inheritance of Human Intelligence." *Acta Psychiatrica et Neurologica Scandinavica,* Vol. XXXVI, No. 2, pp. 175-202.

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intra-familial correlations in intelligence test performance and found that "on the whole, the results agree with earlier investigations."[6]

Comparison of the differences between identical and fraternal twin pairs has provided the best evidence on the genetic basis of human psychological traits. This is based on the assumption that the greater the difference in the degree of similarity between identical and fraternal twins respectively, the greater is the influence of heredity. Merriman (1923) found the correlation between I.Q. (Stanford-Binet) for forty-seven twin pairs, five to nine years old, to be .81; for fifty-eight twin pairs, ten to sixteen years old, .76.[7] Lauterbach (1925) obtained average correlations for seven mental tests of .67 for like-sex twins and .41 for unlike-sex twins.[8]

So far as special abilities and talents are concerned, McNemar (1933) found correlations averaging .83 for identical twin pairs and .47 for fraternal twin pairs on five tests of motor skills.[9] Brody (1937) found correlations between scores on the Minnesota Spatial Relations Test (a test of mechanical aptitude) of .69 for identical twins and .28 for fraternal twins.[10] Vandenberg (1962) administered a battery of psychological tests totalling 117 separate scores to 45 identical and 37 fraternal twin pairs. The tests included: (1) Thurstone's Primary Mental Abilities Tests; (2) a variety of other cognitive and achievement tests; (3) motor skills measures; (4) perceptual skills measures; (5) sensory tests and measures of musical ability and interest; and (6) personality tests. A statistically significant "degree of hereditary control" was found in 52 of the 117 test scores, including some in each of the six groups. Heritability estimates ranging from .59 to .62 were found for the numerical, verbal, spatial and word fluency abilities in the Thurstone test series.[11]

Since Pearson's early study of family resemblances, later investigators have used the same group of twins to compare the

[6] Alström, Carl H., *op. cit.*, p. 199.

[7] Merriman, C., 1924, "The Intellectual Resemblance of Twins," *Psychology Monographs,* Vol. XXXIII, No. 5. Garrett, Henry E., *op. cit.*, p. 278.

[8] Lauterbach, D. E., 1925, "Studies in Twin Resemblances," *Genetics,* pp. 528-568.

[9] McNemar, Q., 1933, "Twin Resemblances in Motor Skills, and the Effect of Practice Thereon," *Journal of Genetic Psychology,* Vol. XLII, pp. 70-99.

[10] Brody, D., 1937, "Twin Resemblances in Mechanical Ability, with Reference to the Effects of Practice on Performance," *Child Development,* Vol. VIII, pp. 207-216.

[11] Vandenberg, Steven G., 1962, "The Hereditary Abilities Study: Hereditary Components in a Psychological Test Battery," *American Journal of Human Genetics,* Vol. XIV, No. 2, pp. 220-237.

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heritability of physical and psychical traits. Newman (1940) in a study of 50 identical and 50 fraternal twin pairs found the variance due to heredity to range from 65 to 80 per cent in four tests of mental ability, compared with a range of 75 to 90 per cent in six measures of physical traits (see Table I).[12]

TABLE I

HERITABILITY OF PHYSICAL AND MENTAL TRAITS IN TWINS

(Newman, 1940)

Character	Percentage of variance due to heredity	Percentage of variance due to environmental and other factors
PHYSICAL CHARACTERS		
Standing height	81	19
Sitting height	76	24
Weight	78	22
Head length	78	22
Head width	75	25
Total finger ridges	90	10
ABILITY TESTS		
Binet Mental Age	65	35
Binet I.Q.	68	32
Otis Test Score	77	23
Otis Test I.Q.	80	20

Thus, the evidence from twin studies supports Pearson's conclusion that physical and psychical traits are inherited to about the same extent.

Studies of identical and fraternal twins are a method of evaluating the influence of *genetic* factors by taking subjects who have experienced the *same* environment but differ in genetic endowment (*i.e.*, fraternal twins) and comparing them with subjects in which *both* heredity and environment are the same. Other investigators have evaluated the effect of *environmental* influences by studying foster children and identical twins separated in infancy or early childhood. In the latter case the comparison of two subjects exposed to different socio-cultural forces, but alike in genetic make-up, permits the evaluation of environmental influences when genetic factors are held constant.

Burks (1928), in California, compared a group of adopted children placed within the first year of life with a control group

[12] Newman, H. H., 1940, *Multiple Human Births,* Doubleday, Doran & Co., New York, p. 171.

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of children matched with the adopted children for age, sex and intelligence, and living in homes matched with the foster homes for locality and occupational level. Tests of the foster children at ages from 5 to 14 indicated that residence in a good home resulted in an increase in mean I.Q. of 6 to 7 points.[13] However, this was still some 7 to 8 points below the mean I.Q. of the control children. Furthermore, it should be noted that the "probable error" in I.Q. determination is about 5 points—*i.e.*, the average variation in score when the same individuals are tested twice.[14] The evidence from this and similar studies[15] indicates that environmental changes have some but surprisingly little effect upon intelligence test performance.

Newman, Freeman and Holzinger (1937) made thorough and complete case studies of 19 pairs of identical twins separated in infancy or early childhood and brought up in different families. The average difference in I.Q. (Binet) between identical twins reared separately was 8.2 points, as compared to average differences of 5.9 points between identical twins reared together and 9.9 points between fraternal twins reared together (see Table II).[16]

TABLE II

DIFFERENCES BETWEEN TWINS

(Newman, Freeman and Holzinger, 1937, pp. 724, 344, as brought together by Woodworth, 1941, p. 19)

	Fraternals	Identicals reared together	Identicals reared apart
Stature	4.4 cms.	1.7 cms.	1.8 cms.
Weight	10.0 lbs.	4.1 lbs.	9.9 lbs.
Binet I.Q.	9.9 pts.	5.9 pts.	8.2 pts.

Thus, the net effect of environmental forces was a rather negligible change in average I.Q. of 2.3 points. Burt (1958), in a similar study in England of 30 twins "brought up in different environments almost from birth," found higher correlations in intelligence test

[13] Burks, Barbara S., 1928, "The Relative Influence of Nature upon Mental Development," *Yearbook of National Social Studies Education,* Vol. XXVII, No. 1, pp. 219-316.

[14] Woodworth, Robert S., 1941, *Heredity and Environment,* Social Science Research Council Bulletin 47, New York.

[15] Lawrence, E. M., 1931, "An Investigation into the Relation between Intelligence and Inheritance," *British Journal of Psychology, Monograph Supplement,* No. 16. Leahy, A. M., 1935, "Nature-Nurture and Intelligence," *Genetic Psychology Monograph,* Vol. XVII, pp. 235-308.

[16] Newman, H. H., Freeman, F. N., and Holzinger, K. J., 1937, *Twins: A Study of Heredity and Environment,* University of Chicago Press, Chicago.

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performance for identical twins reared apart than for non-identical twins reared together, and for siblings reared apart than for unrelated children reared together (see Table III).[17]

TABLE III

(Burt, 1958)

	Identical twins reared together	Identical twins reared apart	Non-identical twins reared together	Siblings reared together	Siblings reared apart	Unrelated children reared together
MENTAL "INTELLIGENCE"						
Group Test	.944	.771	.542	.515	.441	.281
Individual Test	.921	.843	.526	.491	.463	.252
Final Assessment	.925	.876	.551	.538	.517	.269
SCHOLASTIC						
General Attainments	.898	.681	.831	.814	.526	.535
Reading and Spelling	.944	.647	.915	.853	.490	.548
Arithmetic	.862	.723	.748	.769	.563	.476

SUMMARY

(1) Correlation studies of family resemblances in intelligence and temperament have produced, on the average, coefficients of .50, which is about the same as for physical traits.

(2) Correlation studies of twin resemblances in psychical traits have yielded, on the average, coefficients of .75, which is about the same as for physical characteristics.

(3) Comparisons of identical and fraternal twins have indicated that genetic factors account for 50 per cent to 75 per cent of the variance in general intelligence, special mental abilities and temperament.

(4) Studies of foster children have shown that they tend to resemble their real parents more than their foster parents, and that change in their environment has surprisingly small effect upon intelligence test performance.

(5) Studies of identical twins reared apart have demonstrated that they are more alike in mental traits than fraternal twins or siblings reared together, and that differences in intelligence test performance are not much greater than for identical twins reared together.

[17] Burt, Cyril, 1958, *op. cit.*, p. 6.

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Genetics and Intelligence

By HENRY E. GARRETT

It has long been recognized that the study of twins is one of the best ways of determining the relative contribution of nature and nurture to intelligence. A recent paper[1] has brought together twin data accumulated over the past 50 years, excluding only those studies in which measures of intelligence were inadequate or scanty, subjects too few or mentally defective, and information incomplete as to whether twin pairs were identical or fraternal. The review is important because of its inclusiveness and the care with which it was carried out. Median correlations were computed from 52 studies ranging from those of identical twins reared together and apart down to studies of siblings and of unrelated persons reared together and apart. From these data we can compute an index of *heritability* which will show the extent to which heredity makes for resemblance in intelligence between twin pairs. Heritability (H) is given by the formula

$$H = \frac{r_I - r_F}{1 - r_F}$$

in which r_I equals the correlation between measures of intelligence in identical twins reared together, and r_F equals the correlation between intelligence measures in fraternal twin pairs. Identical twins are those who come from a single fertilized egg, are always of the same sex, and are markedly alike. Identical twins have the same genetic endowment. Fraternal twins come from two eggs, may be of the same or of opposite sex, and while often markedly alike differ more than do identicals. Fraternals are really brothers and sisters of the same age.

Assuming the correlation of identicals reared together to be due solely to heredity, and that of fraternals to *both* nature and nurture, we can estimate the contribution of heredity to twin variability by the above formula. The median correlation for intelligence in identical twins reared together is .87, and the median correlation for intelligence in fraternal twins is .53. Substituting in the formula, we have

$$H = \frac{.87 - .53}{1 - .53} \text{ or } .72$$

This means that 72 per cent of the twin variance in fraternals can be attributed to heredity, and 28 per cent to environment. The

[1] Erlenmeyer-Kimling, L., and Jarvik, L., "Genetics and Intelligence: A Review," *Science*, 1963, Vol. CXLII, No. 3598.

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figure of 72 per cent for intelligence may be compared with the heritability figure of 90 per cent for the incidence of ridges on the finger tips of twins. An index of heritability of around 75 per cent for intelligence is generally reported.[2]

Another test of the power of heredity may be made using the data for identical twins reared together and identical twins reared apart. The correlation for identical twins in intelligence, when reared together, is .87, and the correlation for identicals reared apart is .75. If we square the first *r*, we find that 76 per cent ($.87^2$) of the variance in identicals reared together can be assigned to heredity; and if we square the second *r*, it appears that 56 per cent ($.75^2$) of the variance of twins reared apart can be attributed to nature *plus* nurture. This means that the varying environment was able to reduce the hereditary contribution by only 20 per cent (76% − 56%). It is clear that heredity is far more potent than environment: in fact, at least in the ratio 3 : 1.

Before the 1930's, the general opinion of scientists was that inherited endowment is more important than environment in shaping behavior. After the 1930's, owing to many factors, psychological as well as social, emphasis shifted to nurture as the major cause of individual differences, and numerous treatises by sociologists and cultural anthropologists confidently proclaimed the power of "culture" to change human nature. Acceptance of nurture as of primary importance in determining behavior has been carried over into the domestic and even into the foreign policy of the American and other governments.

There have been of late, however, signs of renewed interest in the rôle of genetics in intelligence. This has been due in part to the fact that the environmentalists' views when implemented by social planners have led to conspicuous failures. In several large cities, for example, groups of deprived people taken from their slum dwellings and put into new public housing have promptly turned these buildings into vertical slums. Windows are smashed, plumbing ripped out, filth and garbage allowed to accumulate.

Failure of the environmentalist credo does not mean that we should take a defeatist attitude and decide forthwith that a new environment will have no effect in changing behavior. But it does mean that we should temper our enthusiasm for nurture to take account of the reality of native endowment. We cannot expect people immediately to behave better as soon as their condition has been improved. Ignorance, illiteracy and crime must first be attacked at source, and low grade mentality recognized for what it is before education and training can take hold. Even the best will in the world is not enough to produce significant social change,

[2] Newman, H. H., Freeman, F. N., and Holzinger, K. J., *Twins: A Study of Heredity and Environment,* University of Chicago Press, Chicago, 1937.

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as the failure of many dedicated missionary efforts has shown. Appreciation of the part played by heredity in intelligence will have a salutary effect on those who expect miracles from well-meant social pressures that are often futile because of a failure to take account of native differences. Perhaps we can never make a silk purse out of a sow's ear, but with care we may make a better pig's-ear purse.

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RADIATION AND RACIATION

By NATHANIEL WEYL

From the dawn of the nuclear age until the end of 1960, total radiation from bomb tests amounted to an estimated maximum of about .4 roentgens or about 1/60th of the threshold quantity needed to produce observable medical effects.[1] This rather inconsequential dosage evoked a prodigious scientific and popular literature on the malign effects to be anticipated from the testing, covering both leukemia and other major debilitating diseases, and lethal and sublethally deleterious mutations.

Considering the enormous amount of work done on the genetic and medical effects of the bomb tests, it is remarkable that so little study has been made of the consequences of variations in the natural radiation levels at different places on the surface of the earth.[2] Despite the incompleteness of the data, some speculation concerning the relationship of radiation to the shaping of human —and, for that matter, probably animal and plant—races is possible.

Natural Radiation. Except for areas of abnormally high natural radiation, one can say that dosage in roentgens per year will vary from about .053r over open ocean to about .170r over granite rock in the North Temperate Zone and at an altitude of 5,000 feet. Obviously, dosage will increase sharply at still higher altitudes, but these generally are sparsely populated. Moreover, much greater radiation occurs over such special geological formations as the Swedish alum shales, where dosage is about .700r per annum.[3]

[1] Earl H. Voss, *Nuclear Ambush,* Regnery, Chicago, 1963, p. 7, estimates total bomb-test fallout to 1961 at .25 to .42 roentgens. (The roentgen, or "r," is the amount of gamma radiation which produces about 2 billion ion pairs per cc. of air).

[2] The highest known natural radiation on earth occurs on the New Zealand-owned South Pacific island of Niue, where the dosage is 7r per annum. Although the New Zealand nuclear scientist Sir Ernest Marsden began to study radioactive effects on the population in August 1962, no report had been received by the Atomic Energy Commission a year later. The A.E.C. expressed similar ignorance concerning medical and genetic effects in the monazite sand bearing regions of Brazil and Kerala, India.

[3] *Report by the World Health Organization on Genetic Effects of Radiation,* 13th March 1957, Annex 4 by Professor R. M. Sievert, Institute of Radiophysics, Karolinska Hospital, Stockholm. Reproduced in Joint Committee on Atomic Energy, 85th Congress, 1st Session, *The Nature of Radioactive Fallout and its Effects on Man,* Government Printing Office, Washington, D.C., 1957, Vol. II, p. 1768. (In future, this report will be referred to as *Fallout*).

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The estimate of .400r already given for total atom-test radiation during the period from 1945 to 1960 averages out to less than .03r annually, or considerably less than the minimum background radiation encountered over open ocean.

If scientists consider that the genetic effects of bomb-test radiation, occurring over a period of 15 years or so, are serious, then it would seem self-evident that natural radiation—which has occurred continuously over millions of years, from the eras of mountain formation to the present—must be a far more significant agent of genetic change.

About half the natural radiation entering the biosphere is cosmic. In other words, cosmic rays, traveling at speeds approximately that of light, collide with atoms in the atmosphere and send particles hurtling to the earth. The cosmic radiation experienced by man is chiefly secondary or, for that matter, tertiary or of a still higher order of indirection, depending on the number of collisions occurring.

Cosmic radiation varies directly with altitude because the higher one is from sea-level the thinner and weaker is the atmospheric shield which deflects the particles and lessens their velocity. It also increases irregularly as one passes from tropical to temperate latitudes. Particles rushing earthward at equatorial latitudes must penetrate lines of geomagnetic force which are approximately at right angles to their trajectories. When the bombardment is aimed at poleward or temperate zones, however, it tends to strike the earth's geomagnetic field more obliquely, thus increasing the probability that particles will reach the earth's surface. For purposes of this discussion, all the reader need do is visualize the earth's surface as protected by a magnetostatic field.

Almost all of the remaining natural radiation results from radioactive disintegration of the earth's material. There are areas of very intense natural radiation overlying the monazite (thorium-ore bearing) sands in Travancore, India, and along the Brazilian littoral. The average radiation level in Espiritu Santo, Brazil, is approximately .500 rad per annum, whereas in Kerala (Travancore) levels have been estimated as high as 2.814 rad.[4] The Swedish case has already been mentioned. In representative American cities, levels range from .076 rad per annum in Toledo, Ohio, to .176 rad per annum in Colorado Springs, Colorado.[5]

Over a 30-year period roughly corresponding to human fertility, the gonad radiation dose (excluding cosmic radiation) has

[4] Bruce Wallace and Th. Dobzhansky, *Radiation, Genes and Man,* Holt, Rinehart and Winston, New York, 1959, p. 70.

The "rad" is the basic unit of radiation absorption. "The absorption of 1 rad delivers 100 ergs of energy per gram of matter," *op. cit.,* p. 67.

[5] Wallace and Dobzhansky, *op. cit.,* p. 69.

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been estimated at 4.3r over Alpine granites, 2.0r for North American granites, 1.2r for basalts, 0.8r for sandstone and 0.6r for limestone.[6] The broad relationship between radiation and rock mantle, altitude and latitude is shown in the following table compiled by W. F. Libby.[7]

TOTAL RADIATION DOSAGES IN RADONS PER YEAR

	ORDINARY GRANITE		TYPICAL SEDIMENTARY		OPEN OCEAN	
	Equator	55 N.L.	Equator	55 N.L.	Equator	55 N.L.
SEA LEVEL	.143	.147	.076	.080	.053	.057
5,000′	.150	.170	.083	.103	—	—
10,000′	.190	.230	.123	.163	—	—

Significant differences in radiation at different zones of the earth prevailed long before man's emergence as a *sapiens* species. If it is true, as Crow states, that "*radiation-induced mutations increase almost exactly in proportion to the radiation dose*" (his italics), then these spatial differences should have influenced evolution by determining the degree of radiation and hence the rates of mutation of the various races.[8]

Specifically, *man's exposure to radiation and hence his rate of mutation over the ages must have varied inversely with his distance from the magnetic poles and directly with his altitude above sea-level.* Hence, the mutational stimulus should have been greatest among races inhabiting the mountains, the high plateaus and the poleward zones (such as Mongoloids and Caucasoids), and least among the ethnic groups shaped by lowland tropical environments (such as the Negroids, Australoids and Bushmanoids). To the extent that petrology affects this picture, it serves primarily to increase mutation rates among mountain folk since granites and other igneous rocks are generally associated with mountain formation.

A high mutation rate in one environment may be more than offset by the presence of conditions adverse to their survival. Clearly, the profusion of varieties and species is more lavish in tropical than in temperate zones. Ernst Mayr observes that, while a temperate forest may be inhabited by 60 species of birds, the Amazonian jungle will provide a habitat for 600. Similarly, tropical Amboina in the Moluccas has 780 species of fish in its harbor, more than any other sea-coast community. In searching for an explanation, Mayr suggests that "the rarity or short

[6] *Fallout,* Vol. II, p. 1768.

[7] *Ibid.,* p. 1460.

[8] James F. Crow, "The Estimation of Spontaneous and Radiation-induced Mutation Rates in Man," *Eugenics Quarterly,* Vol. III, No. 4, December 1956, p. 205.

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duration of weather-induced catastrophes in the tropics'' may permit a contraction in niche size.[9] He adds that the matter remains somewhat enigmatic.

Genetic Aspects. Various estimates have been made of the effectiveness of radiation as a stimulus to mutation. Dr Hermann J. Muller estimated that ''exposure to about 40r produces as many mutations as arise spontaneously.''[10] In a 1956 article, Dr James F. Crow utilized data from consanguineous marriages to devise a method of estimate somewhat different from that of Muller. Crow concluded that, if human beings reacted as mice do, the dosage needed to double mutations would be about 60r. He added that ''both the British and American committees independently and perhaps fortuitously chose the interval 30-80r as the range within which the doubling dosage might reasonably be expected to lie.''[11]

Using Libby's data, we find that the additional radiation dosage obtained by living at 55 degrees North Latitude instead of on the Equator varies from 4mr/year (4 thousandths of a roentgen per year) at sea-level to between 10 and 20mr/year at 5,000 feet, depending on rock cover. We shall take 6mr/year as representative.

The additional dosage obtained by living at 5,000 feet altitude as against sea-level is from 7 to 13mr/year when the prevailing formation is sedimentary, as is generally the case. We shall assume the average to be 10mr/year.

Finally, the difference in radiation between granite and sedimentary rock is about 50mr/year.

These differences are all small, but they become massive when the radiation dosage is continued over many thousands of years. Radiation effect on the germ cells is cumulative and independent of the rate of delivery. As Wallace and Dobzhansky[12] put the matter:

> The number of mutations induced by a given number of roentgens is the same regardless of whether the exposure is short or long. The same number of roentgens may also be

[9] Ernst Mayr, *Animal Species and Evolution,* Belknap Press of Harvard University, Cambridge, 1963, p. 88.

[10] Hermann J. Muller, "Comments on the Genetic Effects of Radiation on Human Populations," *Journal of Heredity,* Vol. XLVI, No. 5, September-October 1955, pp. 199-200. Reprinted in Muller, *Studies in Genetics,* Indiana University Press, Bloomington, 1962, p. 585.

[11] Crow, *op. cit.,* p. 208. The committees referred to are probably: British Medical Research Council, *The Hazards to Man of Nuclear and Allied Radiations,* Her Majesty's Stationery Office, London, 1956, and National Academy of Sciences, National Research Council, *The Biological Effects of Atomic Radiation,* Washington, 1956.

[12] Wallace and Dobzhansky, *op. cit.,* pp. 87-88.

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delivered in a contious exposure or in several bursts interspersed with periods of "rest." The manner of delivery is, in general, unimportant as far as the number of mutations induced is concerned.

It is easy to see what this means to man. Genetic radiation damage is an insidious thing: very small radiation exposures add up, and if continued for years may amount to as much as, or more than, an accidental brief exposure to intense radiation. Since genetic damage is cumulative, no radiation increment, however small and insignificant by itself, can be neglected. What matters is the total exposure up to the close of the reproductive or childbearing age.

Crow stated recently that "the amount of genetic harm done is strictly proportional to the radiation dose."[13] H. J. Muller[14] and the National Academy of Sciences, National Research Council,[15] have expressed the same view.

The denizens of sea-level lands at 55 degrees North Latitude would acquire a radiation dosage over and above that of similarly situated persons on the Equator sufficient to double their mutation rate after 10,000 years. In the case of the inhabitants of high land (5,000 feet), as compared with those living at sea-level, the doubling time would be about 6,000 years. For the people living on granite, the doubling time would be about 1,200 years.

When we consider these processes of differential radiation exposure as persisting over the tens of thousands of years during which the different races and subraces of man occupied approximately their present climatic and altitude bands, then the variations in evolutionary pace appear to be highly significant. If our hypotheses are correct, we should expect a considerably greater degree of biogenetic uniformity among Australoids, Negroids and Bushmanoids than among the white and yellow races. Correspondingly, other things remaining equal, the tempi of evolution should have been swifter among the Caucasoids and Mongoloids.

It may be objected that these differentials in radiation should have produced "millions of hopeless monsters"[16] among the light-skinned races; yet such products of mutational deformation are not present *en masse*. Under normal ecological conditions, about 20 per cent of all mutations are believed to be lethal. The harsher the environment, the more relentless the processes of biological

[13] "Possible Consequences of an Increased Mutation Rate," *Eugenics Quarterly*, Vol. IV, No. 2, June 1957.

[14] In *Bull. Atomic Scientists*, Vol. XI, pp. 329-338, 352.

[15] *The Biological Effects of Atomic Radiation, op. cit.*

[16] Mayr, *op. cit.*, p. 438.

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winnowing. Mutations which are harmful, but not absolutely lethal, will usually lessen the survival and reproduction chances of those who bear them.[17] When natural radiation continuously injects detrimental mutations into the gene population, a point is eventually reached (and this can be expressed in simple algebraic equations) at which there is equilibrium between mutation inflow (from radiation) and mutation outflow (from higher death rate).[18]

The elimination of the most genetically damaged individuals by death should not as a rule impose any special handicap on the small minority which bears those few mutations that improve the ability of the organism to cope with its environment. To be sure, these individuals belong to a race or population which bears a more-than-average load of detrimental mutations and which might hence be subjugated, dispersed, conquered or killed by those bearing a lesser one. However, the penalty of a heavy mutational load may be counterbalanced by a more rapid evolution toward environmental mastery. Furthermore, these different races are normally allopatric.

The hypotheses here advanced contribute additional possible causes for the torpor of the Tropics and the sluggish evolutionary pace of the three primarily tropical races. As to the significance of these factors in the cerebral progress of man from apery to civilization-building, a crucial issue is the respective rôles of mutation and genetic recombination in shaping the evolution of those animals which reproduce sexually.

[17] An important exception is when the gene is lethal or severely damaging when homozygous, but protective when heterozygous. One of the best known examples is the gene which causes sickle cell anemia when homozygous, but which protects against malaria when heterozygous.

[18] Wallace and Dobzhansky, *op. cit.*, pp. 130-136.

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THE ANTHROPOLOGICAL STRUCTURE OF THE POPULATION OF SCHWALM

By BRUNON MISZKIEWICZ

TRANSLATED FROM THE GERMAN BY DONALD A. SWAN

This short article is concerned with the anthropological structure of the population of Schwalm, Germany, which was the subject of a heredito-biological investigation by Dr Schade in 1940.[1]

Schwalm, which is located between Marburg and Kassel in West Germany, is thickly surrounded by forests, and by the Knull mountains in the east and branches of the Keller mountains in the west. Dr Schade writes: "The population is marked by distinctive cultural traits and is molded by the milieu into a specific type." In this investigation the mean values of the anthropological traits of 483 men and 454 women were calculated. From his anthropological analysis Dr Schade concluded that the population in this region was predominantly Faelic-Nordic.* There was also to be observed in this population an Alpine as well as a Mediterranean strain. Unfortunately nothing was stated about the origin of this unique population group. It is possible that in this case we are concerned with isolating processes, which are caused in paricular by the unique geographical location.

The arithmetical mean values of the Schwalmian population are given as follows:

ANTHROPOLOGICAL TRAIT	MEN N=483	WOMEN N=454
Stature	167.8 (N=450)	156.4 (N=408)
Cephalic Index	82.6	83.4
Morphological Facial Index	86.7	85.2
Nasal Index	60.3	61.1
Eye Color 1-6 (Martin-Schulz)	70.1% (N=447)	68.1% (N=423)
Hair Color A-O (Fischer-Saller)	27.4% (N=447)	26.2% (N=423)

The arithmetical mean values characterize a population group quite well. I have therefore attempted to determine the racial structure of the population according to Wanke's approximation

[1] Schade, H., 1940, "Anthropologische Befunde bei einer erbbiologischen Bestandsaufnahme in der Schwalm," *Verhandlung der Gesellschaft für Rassenforschung,* Vol. X, pp. 36-39.

* "Faelic" is the same as "Atlantic" as usually used in English.—EDITOR.

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method,[2] in which I employed Professor Jan Czekanowski's[3] anthropological constants.* A critical discussion of this method has been given by Bielicki (1962).[4]

The results obtained from the approximation method, bearing in mind the universal anthropological constants employed, are given as follows:

THE LOCATION OF THE INDICES

Anthropological Traits	Nordic	Mediterranean	Armenoid	Lapponoid	Cromagnid (Paleo-Europid)
	a	e	h	l	p
Cephalic Index	78.0	71.5	89.0	89.0	71.5
Morphological Facial Index	89.5	88.0	86.0	80.0	80.0
Nasal Index	63.0	63.0	57.0	72.0	72.0
Eye Color (light)	—1.252	0.984	2.170	0.944	—1.252
Hair Color (light)	—1.052	0.074	1.146	0.477	—1.052

ANTHROPOLOGICAL COMPOSITION OF THE SCHWALM POPULATION (MALES)

	Nordic	Mediterranean	Armenoid	Lapponoid	Cromagnid
	1.428	8.312	2.763	2.763	8.312
	0.269	0.058	0.017	1.540	1.540
	0.150	0.150	0.224	2.810	2.810
	0.003	4.757	11.337	4.584	0.003
	1.316	0.000	1.105	1.146	1.316
Totals	3.166	13.277	15.446	12.843	13.981
Reciprocals	315	75	65	78	71
Per cent of Total Population	52.2%	12.4%	10.7%	13.0%	11.7%

ANTHROPOLOGICAL COMPOSITION OF THE SCHWALM POPULATION (FEMALES)

	Nordic	Mediterranean	Armenoid	Lapponoid	Cromagnid
	1.967	9.554	2.116	2.116	9.554
	0.634	0.269	0.022	0.927	0.927
	0.074	0.074	0.345	2.439	2.439
	0.013	4.511	10.956	4.343	0.013
	1.399	0.003	1.030	0.120	1.399
Totals	4.087	14.411	14.469	9.945	14.332
Reciprocals	245	69	69	101	70
Per cent of Total Population	44.2%	12.5%	12.5%	18.2%	12.5%

[2] Miszkiewicz, B., 1959, "Das Approximations verfahren von A. Wanke und seine Anwendung in der Anthropologie," *Homo*, Vol. VIII, pp. 240-242.

[3] Czekanowski, J., 1954, "Die schweizerische anthropologische Aufnahme im Lichte der polnischen Untersuchungsmethoden," *Przeglad Antropologii*, Vol. XX, pp. 218-314.

* See "Anthropological Investigations of Skiers," by Professor Wanda Steslicka, THE MANKIND QUARTERLY, Vol. II, No. 2, pp. 85-91, for an outline of Professor Czekanowski's method of differential diagnosis.—TRANSLATOR.

[4] Bielicki, T., 1962, "Some Possibilities for Estimating Inter-Population Relationships on the Basis of Continuous Traits," *Current Anthropology*, Vol. III, No. 1.

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The Nordic element was definitely the most frequent amongst both sexes in Schwalm, although the Nordic proportion was eight per cent higher in the case of the men than in the case of the women. Next amongst both sexes were the Lapponoid (Alpine) and Mediterranean elements. For the male series the Cromagnid (Palaeo-Europid) was fourth and the Armenoid element was the least frequent. In the female series the relationship of the last two components—*i.e.*, the Armenoid and Cromagnid—was reversed. (As far as the sums of reciprocals are concerned the difference is, however, so small that the percentage frequencies of these two components are practically identical). A similar anthropological composition was to be expected from the arithmetic mean values.

Dr Schade's hypothesis—that he was dealing with a predominantly Nordic-Faelic population—is confirmed by these results. In addition, the Alpine strain mentioned by Dr Schade is contained in the Palaeo-Europid-Lapponoid components of this analysis. Naturally it is the approximate percentage results which give us additional information.

Similarly, we find almost the same results in anthropological syntheses of this and neighboring regions in recent publications by Professors J. Czekanowski[5] and I. Michalski.[6] Accordingly, it would be appropriate to compile for Germany, using uniform methods, uniform anthropological maps on the basis of the voluminous material which is available.

[5] Czekanowski, J., 1957, "Zum Problem der anthropologischen Struktur von Deutschland," *Bulletin der Schweizerische Gesellschaft für Anthropologie und Ethnologie,* Vol. XXXIII, pp. 37-41.

[6] Michalski, I., 1958, "From the Studies in the Anthropological Structure of the German Nation," *Bulletin de la société des sciences et des lettres de Lodz,* Cl. III, Vol. IX, No. 6.

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ETHNOLOGICAL NOTES ON TANGANYIKA AND DAR ES SALAAM

By R. GAYRE OF GAYRE

Dar es Salaam—Arabic for "Haven of Peace"—arose out of a small fishing village, Mzizima, a hundred years ago. In 1857 the Sultan of Zanzibar created here a port and trading station, and it was on this Arab foundation that the German East Africa Company subsequently developed the city. Like the whole country of Tanganyika, the capital is in the process of being handed over from White to Negro rule. The police, most of whom travel about in motor cars, are Negro, as presumably are the administrators and all or most of the officials of the Government. This was, therefore, an interesting time to visit Tanganyika, a time when independence had just taken place and the new administration with its native Negroid cadre was assuming full control of the country.

On arrival at Dar es Salaam airport, in June 1963, I found that the Negro officials were still working to some extent under European advisors. The former were, however, in charge of the administration. They were not efficient and there was trouble with them over my tickets, until the White advisors intervened and told them they were in order. How far this state of affairs is solely due to inexperience or indicates a more permanent lowering of standards, only time will show.

The people of the city of Dar es Salaam are a mainly polyglot population. Most of the Negroes themselves are Swahilis and speak Swahili, the language which acts as a *lingua franca* in much of eastern Africa. In addition there are Zulu elements brought in by the Germans, Hamites from further north, and Nilotic people as well. Most of the Africans in Dar es Salaam itself are Muslims. While the tribal basis of society is the dominating factor in most of Tanganyika, religion is a more potent influence in Dar es Salaam and along the coast, because of Arab influence. The main tribe, however, in this coastal region is the Wazaramo, and the fishing interests are largely African.

Nevertheless, the trade of Dar es Salaam seems to be substantially in the hands of Indians, as all the traders and shops, with very few exceptions, are Indian. One sees Hindus, Sikhs and Pakistanis everywhere. Indian institutions, such as temples and the like, are very evident throughout the city. A considerable number of Arabs are also to be seen, although most of those I

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saw were more of the Negro type—being Moslem converts in origin —rather than pure Arabs. However, there are Arab types as well. Thus, in the city we find Indians, Pakistanis, Sikhs, Arabs, and varying degrees of cross breeds, in addition to Europeans and Negroes. Dar es Salaam reflects in its streets the complex ethno-

HINDU LODGE IN DAR ES SALAAM

logical history of the country, and constitutes a useful open air laboratory for anthroposcopical investigations.

Dar es Salaam and its neighbourhood—particularly Bagamoyo, immediately opposite Zanzibar—was the centre of the slave trade which did not end until quite late in the nineteenth century, under British pressure. The slaves who were captured by the Arabs were brought to the coast, here or in the vicinity, or were taken across to Zanzibar and sold in the slave markets. This is, therefore, a region of Africa which typically reflects the impact of the Arabs on the continent. The Arab expansion, dating from the sixth century or even earlier, and stretching from the Persian Gulf and north east India right down to the east coast of Africa, created Moslem settlements, as well as Moslem populations resulting from intermarriage with the indigenous population, and conversions on what must have been a relatively large scale when the small numbers of the Arabs is taken into consideration As a result of the activities of these Arab traders we find Chinese porcelain, dating from the eleventh century, along this east coast of Africa, with glazed pottery from Persia, beads from India, and other exotic imports.

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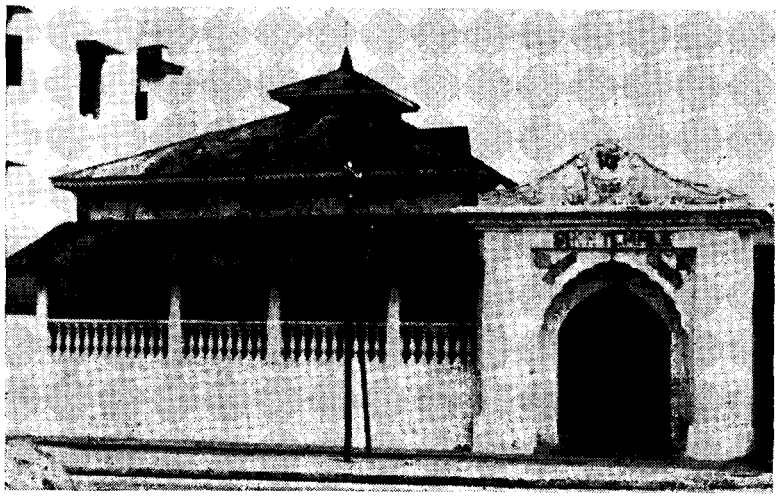
In the course of their development of the slave trade, the Arab traders laid the foundations for the trade routes into the interior from the coast of Tanganyika. In spite of the nefarious activities of the Arabs as slave raiders and traders till as late as less than a century ago, the Negroes have, in the recent past, not appeared



SIKH TEMPLE

to have had as great a hostility to them as they have had—at least among their politically conscious sections—for the Whites, who suppressed the slave trade. This may, in part, be due to the fact that a large proportion of the so-called Arabs of today are no longer really Arabs, but are cross-bred with Negro and so considered "blacks" by the Bantu, when thought of in a context which involves comparisons with Europeans, although they are no doubt recognised as a distinctive group which can attract hostility to itself once the Europeans are out of the way. This we have, in fact, seen recently in the overthrow of the Sultanate of Zanzibar and its Arab dominated coalition government in January 1964. This event, which was brought about by a Negro revolution, was followed by mob violence against Arab shopkeepers in which many Arabs were killed.

As a consequence of this complex ethnological situation the Moslem population not only includes Pakistanis of recent historical settlement, but also Moslems of Arab type and physique, wearing the fez and the loose trousers typical of the Semitic world, as well as the individuals of distinct and unmistakably Negroid appearance who are dressed in the same manner. Needless to say Islamic

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Mosques are in evidence quite as much as Indian temples. The Moslems are generally of the Sonni sect.

The influence of Caucasoid blood, whether from Arab sources or from even earlier and more remote origins through Hamitic contacts, is reflected in a less prognathous, less Negroid appearance

OUTRIGGER CANOE ON THE BEACH AT DAR ES SALAAM

of the features of many of the Africans and, generally speaking, in the tendency to lighter, yellower skins.

No doubt it is from the miscegenation between the Arab settlers in particular on the east coast of Africa and the indigenous Negroes that a substantial proportion of the Caucasoid genes, which are observed in some of the Negroid (Bantu) tribes right down into South Africa, have come—quite apart from any crossing with European Caucasoids at a much later period in history.

Another reminder that influences from across the Indian Ocean have beaten upon the eastern shores of Africa long before the relatively recent settlement of Indians, Pakistanis and Malays (which, in the south at any rate, dates from the time of the Dutch), is provided by the indigenous boats which may be seen drawn up on the shores at Dar es Salaam. These have outriggers on them —a feature which must have been imported from the east just as much as were the twin and triple hulls of the catamarans and trimarans now being built in Europe and America. The neighbouring ruling classes of the island people of Madagascar are Malays and so is their language. The outrigger probably indicates a similar ethnic infiltration among the fishing folk of Tanganyika.

The writer strongly favours separate national development of all

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ethnic groups, whether they constitute distinct racial types (such as the Bantu and the Whites in South Africa) or nationalities (as the Scots, English or Irish), and is consequently in no way opposed, as a matter of principle, to the concession of independence to Tanganyika. Therefore, when we draw attention to the meagre

FISHING BOAT WITH OUTRIGGERS

resources on which that independence is founded, this must not be construed as evidence of hostility to its having been granted. For the purpose of objective reporting of facts it should, however, be pointed out that when compared with those of Scotland, to take for example a small country which is not an independent state, the resources of Tanganyika are infinitesimal. This is illustrated by, for instance, the University and the Museum in Dar es Salaam. When we think of the great national and, indeed, world seats of learning provided by Edinburgh, St Andrews, Glasgow and Aberdeen Universities, and the great museums in these centres, the contrast is simply astonishing. Whatever may be the potential qualities of this ethnic conglomeration, they have a long way to go before they can be said to have developed to the condition of a small provincial county in any European country, or to that of the most retarded North American state—no matter how backward it may be.

The Negroes of this state are composed of about 120 different native tribes, and this, combined with the large coastal populations of Moslems (Arabs and others), and the Indians in the trading centres, must be a factor making for immense difficulties in

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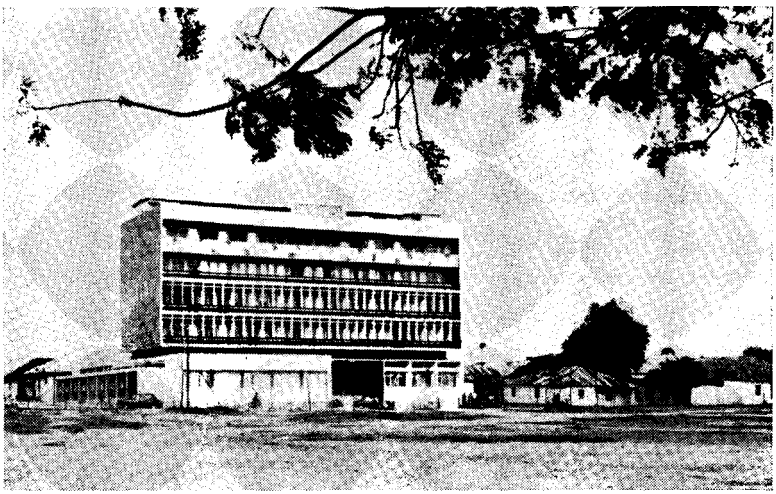
attempting to achieve national cohesion. The fact, however, that the now much abused *indirect rule* was applied under the colonial regime means that it has allowed for a more responsible political development than where direct rule has been applied. This development—based on the advancement of the tribes by the evolution



UNIVERSITY OF TANGANYIKA

of their own cultures, laws and customs—has, no doubt, been arrested by the imposition of a "Westminster type" of constitution, which is suitable for hardly any people other than the English—let alone the Africans.

The Negroes themselves are mostly of Bantu origin, with, towards the north, elements of Hamitic—another strain carrying Caucasoid genes, the influence of which is seen in distinctly Hamitic types as far south as south-west Africa.

In 1954 the Negro population of the whole of what was then called the Tanganyika Territory was eight million, the Asiatic population was sixty-nine thousand, the Europeans numbered twenty-two thousand (which can be considered largely transitory), and there were also about fifteen thousand Arabs.

The European influence in this territory was formerly principally German, later supplemented, and to some extent replaced, by British. Even today, however, much German is still spoken in the capital, Dar es Salaam—in the big hotel, formerly built for the Kaiser's visit and in those days called the Kaiserhof, this was the only language one heard spoken among the guests in the outdoor restaurant of the hotel. But the majority of these German speakers were young officials and technicians from the Democratic German

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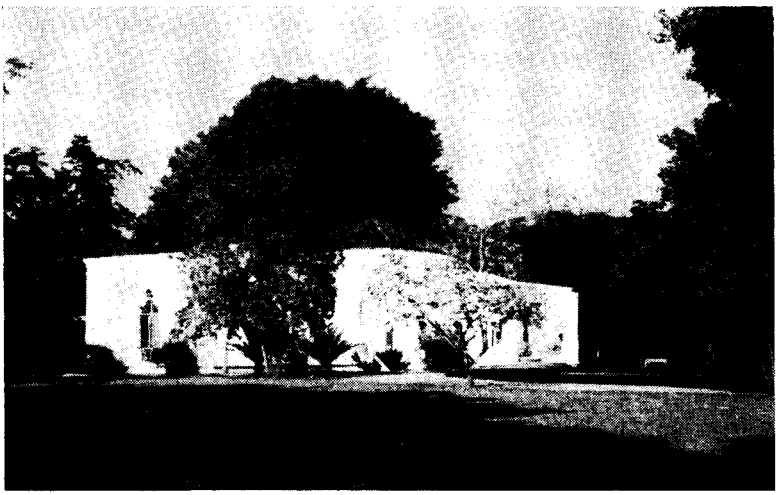
Republic. Other Europeans from east of the Iron Curtain, such as Czechs, were also in evidence in the hotels. Thus the decline in the numbers of Europeans may well not be so marked as the emigration of British colonialists might indicate, as their numbers must be in process of replacement by officials and representatives



DAR ES SALAAM MUSEUM

(from east of the Iron Curtain) of what might well constitute some form of neo-colonialism, if their presence does not prove to be of a purely transitory character.

The European community of Dar es Salaam at the time of independence was estimated at about 5000. After the British (which probably included those of German origin, by then British subjects), the Greeks appear to form a sizeable community. The Greeks and Asians between them control many of the Tanganyikan sisal estates. The Asiatic community in the city amounts to about 25,000. Among the Indians there are about 2500 Goans. The Arabs, despite their potent influence in the history of Dar es Salaam and the coast, as well as in the spread of their religion, amount to no more than about 2000 persons.

The prosperity of Tanganyika in no small measure relies upon the sisal industry (it accounts for exports worth £13 million or $38 million per annum), which was introduced in 1892 by the Germans. The sisal is chiefly exported to Britain, the U.S.A., the Commonwealth, and Europe, although some goes to the Far East.

Although the modern trade with Tanganyika is carried on by steamers, Arab dhows still arrive from the Persian Gulf and India, carrying Persian rugs, Mangalore tiles, dates, and other eastern products. Their crews reinforce the Arab influence in the culture of this extremely heterogeneous people.

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KLINEBERG'S 'NEGRO-WHITE DIFFERENCES IN INTELLIGENCE TEST PERFORMANCE'

By HENRY E. GARRETT

Dr Klineberg's paper on Negro-white differences in intelligence test performance[1] is as persuasive as are Klineberg's earlier writings on the same subject. And unfortunately it is as specious as it is disarming. I offer three comments:

1. MATCHING GROUPS.—It would be impossible for an experimenter to meet the criteria for comparability of racial groups laid down by Klineberg. In addition to measurable socio-economic variables, he lists, for example, such factors as "motivation, self-confidence, opportunity for wider experience and other related factors," plus "caste as well as class differences." These subjective factors are not controlled, of course, when members of the same race (*e.g.*, boys and girls) are compared, nor when two individuals are contrasted on a profile. Strictly speaking, therefore, if comparability of this sort is demanded, *all* comparisons, including racial, are ruled out or their interpretation severely limited.

I doubt if this extreme view of matching is tenable. In children, at least, inner factors are often nebulous and ill-defined, and are quite variable in their effect. More importantly, we want to compare two groups as we find them in the real world and not in some Utopia where all attitudes and emotional variables have been made constant. Moreover, many group differences belong to the group identification, and hence are part of what we want to measure. Thus, men and women do not have the same motivations because they are men and women.

2. OVERLAP.—I do not believe that Klineberg rightly interprets overlap. He writes that his Instructor at Columbia University stressed the importance of the *range* (his italics) in comparing two distributions. As I recall, the same Instructor also stressed the value of the mean or median as being the typical measure in the distribution and hence the only statistic to be used in a fair comparison of two groups. I have pointed out elsewhere that

[1] Klineberg, Otto, "Negro-white Differences in Intelligence Test Performance: A New Look at an Old Problem," *American Psychologist*, Vol. XVIII, 1963, pp. 198-203.

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whereas some women will excel the median man in height and strength at each age level, no one seriously doubts that men have both a height and strength advantage over women. Overlap is inevitable unless one compares the abilities of such extreme groups as white rats and college freshmen.

3. TREATMENT OF INDIVIDUALS.—Klineberg stresses the oft-quoted but unsound dictum that persons should be treated strictly as individuals. (He quotes Professor R. S. Woodworth out of context on this). Obviously, one simply cannot do this: a person is one thing or another, a Negro or a white man, a man or a woman, educated or ignorant, old or young. His characteristics constitute his *gestalt*. It sounds high-minded and tolerant to insist that every individual be treated as an individual divorced from his group, but in truth it cannot be done. Also, Klineberg continues to speak of the "accident of inherited skin color," or of prejudice against a man whose skin "happens" to be differently colored from one's own. Skin color does not just happen and is no accident. And skin color is only one factor in the complex of traits which differentiate the Negro from the white man.[2]

[2] Garn, S. M., *Human Races*, Charles C. Thomas, Springfield, Illinois, 1961.

A new study of human intellect in races and peoples . . .

THE GEOGRAPHY OF INTELLECT

BY NATHANIEL WEYL AND STEFAN POSSONY

A thoroughly researched evaluation of the current problems that confront human intelligence and the direction in which we are being led by an over-zealous disregard of the basic factors that shape man's brainpower: *e.g.*, climate, social and religious institutions, systems of government and beliefs, the leadership of scholarly élites, radiation, the effect of month of birth, etc.
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Book Reviews

THE GEOGRAPHY OF INTELLECT

By Nathaniel Weyl and Stefan T. Possony. Henry Regnery Company, Chicago, 1963. Pp. 299. Price $7.95.

Mr Nathaniel Weyl needs no introduction to the readers of THE MANKIND QUARTERLY, as he has been the contributor of a series of articles which have created very considerable interest. He has also written a number of books, such as *The Negro in American Civilization*, which are well known. His co-author on this occasion is Professor Stefan T. Possony, who is the director of the Hoover Institution on War, Revolution and Peace, and an associate at the Foreign Policy Research Institute.

The Geography of Intellect is a major contribution in this field, dealing with the study of intellect in history, in its relationship to race, climatic cycles and civilisations, and going on from those premises to discuss intellect and genius in all its historical and racial patterns. It is a work which must be treated seriously, and should be in the hands of all who are interested in man, his development, and distribution. Certainly the facts which are massed here cannot be ignored by any honest and fair-minded reader, and where he may not agree always with the conclusions of the authors he must at least offer some more plausible explanation, if one exists.

The book is divided into sections among which are the following:

"The Study of Intellect in History," starts with Hippocrates and comes down to Karl Marx and ethnopsychology, Darwin and genetics, and Francis Galton and the twentieth century.

In "The Emergence and Significance of Race," the question of human hybridisation is mentioned, as are the boundaries established by geographical factors such as climate between the races, the torpor of the tropics and its effect upon selection, and the resulting races. This chapter includes a discussion of brain sizes of modern races and their relationship to intelligence.

"Climatic Cycles and Civilizations" are next discussed in relation to cycles of rainfall and desiccation, and in this connection the part played by the Mongols in relation to the drying up of Asia in the historic past, malaria and its effect on civilization, Islam and Climate, and even ozone and civilization are discussed.

"In Greeks, Romans and Jews," the genetic path of Greece, Roman demography and decline, eugenics and the Jews are dealt with.

The nature and limitations of intelligence tests, the superiority of north-western European intelligence, intelligence and class, and eugenics and the future, are discussed in "Intelligence Tests and Intellectual Elites."

"Racial Patterns in Intelligence and Leadership" provides an interesting section of ethnological material which covers the American Indians and Negroes, the Puerto Ricans and Mexicans, the Chinese and Japanese, the Pacific peoples, the intellectual leadership of America, and the class aspects of the American élite.

In "Somatic Differences Among Races" we find a discussion of blood types, malaria and race, blood type and migration patterns, tasters and non-tasters, human stature, cranial index, musculature, facial shape, and bone and hair differences.

"The Loyal, the Unloyal and the Disloyal" will attract attention, since it deals with the treason of the scholars, the anxious American, caste and loyalty, the levelers and the Protestant ethos, and so on.

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"Inequality and the Free Society" is, as it were, the conclusion. The authors end with the cult of mediocrity, genocide in Negro Africa, the destruction of the creative minority, and celibacy and fertility.

Attention is drawn to the fact that the upper classes, outside the Caucasoid regions as within, tend to be lighter skinned and narrower faced than the rest of the population (pp. 215 ff.). Some have argued that this is not necessarily due to Caucasoid genes. In so far as light skin alone is concerned this could well be the case, since the upper classes come, generally, to live a more indoor life, or so it can be argued, and therefore the defensive mechanism of pigment is not so necessary. Actually, this is only a true argument for our own times. For throughout most of racial history the upper classes have had to fight, and take part in the chase—which is the peaceful concomitant of fighting—and in administration, which has involved long journeys, often in the saddle. The upper classes, therefore, have been as much in need of protective mechanisms, or nearly so, as the peasants working in the fields.

Furthermore, it is not really true to say, as some have suggested, that the narrow-faced is an old-man form, and that it becomes associated with city life. For, in fact, when contrasting cities and surrounding country in studies in Europe, this is not invariably found to be so. It is certain that in Britain, to take an example, the populations of the big cities have probably a more alpine look than have those of the rural areas. Although there is reluctance to see the narrower faces and lighter complexions as due to Caucasoid genes, it seems hard to escape this conclusion, certainly as regards the major factor which is involved. It is significant, for instance, to realise that the Manchus, who conquered and ruled China, were depicted as not only of this type but with blue eyes also. While there is no doubt in the Japanese a strain from the Ainu which may be related to the Caucasoids (as some think, although this reviewer looks upon their relationship as more Australoid than Caucasoid—although of course the Australoids may stand nearer to the Caucasoids than any other stock), there can be little doubt that conquerors have come from time to time from the mainland, and the probabilities are that these shared some of this Caucasoid blood which crept into northern China as a conquering element from quite early times. Therefore, any tendency to narrowness of features and lightness of skin in the Japanese would seem to be quite reasonably explained by selection in a certain class, in this case the ruling stock, in favour of that strain. The same thing is true when we come to survey littoral Africa. For here we can see the actual transition from north to south, such as in West Africa, or again in East Africa, from strains which have more Caucasoid elements to those with less.

The authors have no illusions about the poor quality of much of the work which is today projected as sociology and gullibly swallowed without any critical examination at all by laymen. Thus, speaking of the views of Talcott Parsons, of Harvard, the authors write (p. 262):

> We have quoted and paraphrased Parsons at such length, not because we believe that his ideas have merit, but because he is one of the more eminent figures in the ocean of mediocrity known as American sociology, and because his appraisal of the American character is typical of that milieu.

We might add that we have been surprised at the way what is called sociology passes itself off for science.

Speaking of the dogma which is peculiar to our times, that of equality, they say (p. 276):

> We are sometimes told that the United States was founded on the principle that "all men are created equal" and that this is its cornerstone. This is a caricature of the historic facts. The phrase in question was placed in the Declaration of Independence by Thomas Jefferson.

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The document that Jefferson may have had in mind was the Virginia Declaration of Rights, written by George Mason, which stated: "All men are by nature equally free and independent." The fact that Jefferson chose the simpler and less precise formulation can be attributed to two factors. First, in its historic context, the Declaration was a protest against laws and taxes discriminatory against the colonists. It referred to *equality of rights* as between two groups of Anglo-Saxons and it could scarcely have occurred to Jefferson and his contemporaries that future generations would strain these words to refer to *equality of innate capacity* among different races. In the second place, the Declaration was an exhortation to war which, like other examples of psychological warfare, had to be judged in terms of its effectiveness in moving men's minds and hearts. Simplicity and force were here of greater value than precision and nicety of formulation. The Declaration did not commit the United States to any course of action. The Constitution of the United States, which did so commit the states and the people, contains no pronouncements about human equality.

Jefferson himself believed in conscious mating and breeding to produce a class of mentally and morally superior individuals. He held that "there is a natural aristocracy among men" and that this aristocracy is "the most precious gift of nature, for the instruction, the trusts, and government of society." John Adams shared the same "aristocratic" view as did Alexander Hamilton and most of the founding fathers of the American nation.

When we come to consider racial equality, the record is even clearer. Throughout his long life, Jefferson adhered to the view that the Negro was grossly inferior to the whites emotionally, morally and mentally. In his extended discusion of the Negro in the *Notes on Virginia,* he concluded: ". . . it appears to me that in memory they are equal to the whites; in reason much inferior, as I think one could scarcely be found capable of tracing and comprehending the investigations of Euclid: and that in imagination they are dull, tasteless and anomalous." While Jefferson opposed Negro slavery on moral grounds, he also believed that the Negro, once emancipated, should be denied American citizenship and deported from the U.S. This allopatric approach to the race problem in America would later be echoed by Marcus Garvey, the Black Muslimes and other Negro groups. These views were echoed by James Madison, Henry Clay and most of the statesmen of the first three generations of American independence. In fact, racial inequality was taken for granted to such an extent that the Bill of Rights could be incorporated into the Constitution by the Congress and the states simply because nobody imagined that any future generation would believe that its provisions were supposed to cover Negroes and Indians.

Jefferson's views concerning the Negro were echoed, in their most essential points, by Abraham Lincoln. In the debates with Stephen A. Douglas, Lincoln denied that he wished to introduce political or social equality between black and white and, in his Cooper Union speech on February 27, 1860, he declared: "In the language of Mr Jefferson, uttered many years ago, 'It is still in our power to direct the process of emancipation and deportation, peaceably, and in such slow degrees, as that the evil will wear off insensibly and their places be, *pari passu,* filled up by free white laborers.' "

These words (and much more to this effect) by the authors need to be said, for there is a mammoth movement of distortion today on the question of the views held by such people as Jefferson and Lincoln, and few, except those who have gone deeply into the subject, know that in fact the great leaders of thought against slavery did not advocate racial or any other kind of biological equality between men and men, and races and races. Whatever may be one's views on these matters, it is essential that myths

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should not be created and perpetuated in the way they are today, for only mischief and trouble can come in the long run from such conduct. The authors, therefore, have performed an important duty in making this plain.

Further on, the authors deal with genocide in Africa (p. 283). Here they are mainly considering the destruction of the White communities in those countries. To this can now be added not only large scale slaughter in the Congo and Angola, but in Zanzibar (of the Arabs), and of the Watutsis, and other tribes elsewhere.

This is the kind of book which a reviewer can go on quoting, giving numerous interesting and arresting passages. We have quoted some of the salient sections into which the book is divided, as well as some passages which are to be found in it, to show the catholic scope of this work, which is unhesitatingly recommended to our readers as a work worthy of their perusal, full of facts, and provocative of much new thought as well as confirmatory of older conceptions which have been refurbished and put forward again, to present a coherent whole of cogent argument.

If this book does not make its mark it is not the fault of the scholarship or the presentation of the authors. Such a book, however, offending as it may well be against the ideas propagated by the dogmatic clichés which appear to activate most of our thinking in these days, could quite well be ignored deliberately as one way best calculated to kill it. We hope that this will not occur, as whether the reader can accept all the authors say or not, it merits wide circulation, careful reading, and cogent argument.

BLACK NATIONALISM: A Search for an Identity in America

By E. U. Essien-Udom. University of Chicago Press, Chicago, 1962. Pp. 367. Price $6.95.

This volume constitutes a sensitive, objective and knowledgeable account of the Black Muslim movement in America. More than that this volume tenders a challenge to many social thinkers who conceive Negro energy as singularly directed toward political, economic and social integration. The principal policy commitment of Negro Nationalism has been racial separation, "a unique type of separatist nationalism seeking an actual physical and political withdrawal from existing society" (p. 7; *cf.* pp. 61 f., 112, 259 f.), a frank espousal of the doctrine of "separate but equal" (p. 98). Negro Nationalism, nonetheless, has constituted the only protest movement in the United States capable of mustering to its standards significant numbers of the Negro masses (*cf.* pp. 102, 306).

Were this all the volume succeeded in saying, it would be added to that list of books dedicated to interesting, but not particularly significant, insights into the racial problems that beset the United States. It does, however, make a brief sally into the influence of class distinctions within the Negro subculture. Its principal contention seems to be that Black Nationalists "question the 'balance' between the ideal of integration and the definition of lower-class Negro 'needs' in practical terms" (p. 331). Lower-class Negro needs are essentially those arising from inadequate housing, job insecurity and constraints upon social mobility. "Integration" has brought little succour to the mass of lower-class Negroes (p. 304). Residential "integration" has been characterized in the Northern standard metropolitan areas by what has become an all but universal pattern of invasion-succession sequence (*cf.* M. Grodzins, "Metropolitan Segregation," *Scientific American*, Vol. CXCVII, No. 4, October 1957, pp. 33-41) in the process of which Negroes have been constrained to pay 28 per cent to 51 per cent in excess of prices paid by White buyers for one and two dwelling unit structures (E. F. Schietinger, "Racial Succession and Value of Small Residential Properties," *American Sociological Review*, Vol. XVI,

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No. 6, December 1951, p. 834) only to find themselves ultimately "resegregated" by White flight. Middle-class Negroes, possessed of economic advantage, have enjoyed the advantage of "leap-frogging" into White communities where, as long as the incidence of non-White occupancy is minimal, stability obtains. These Negroes systematically seek to restrict Negro occupancy in such "integrated" communities either by advocating "benign quotas" in public, or by moral suasion in private, housing. The Negro middle-class has gone so far as to oppose public housing in their immediate environs, because the most distressed segments of the population are Negro, and such projects would precipitate the "invasion" of Negroes (*cf.* p. 310), increase non-White occupancy beyond the "tip-point" and "resegregate" the community. Obstruction to public housing which would minister to the needs of the lower-class Negro, the advocacy of "quota systems" for existing housing, further restricting lower-class Negro access to available low cost units, have been construed by "mass Negroes" as middle-class Negro betrayal of trust. The behavior of the middle-class Negro is construed as little more than an attempt to lose identity in the White community. It is, in fact, reasonably well established that the Negro middle-class evinces antipathy toward the mass of Negroes, in fact antipathy toward negritude in all its manifestations (*cf.* M. Brenman, "The Relationship Between Minority-Group Membership and Group Identification in a Group of Urban Middle Class Negro Girls," *Journal of Psychology,* Vol. XI, 1940, pp. 171-197).

Lower-class Negroes have become increasingly sceptical of middle-class Negro aspirations (p. 306). One of the most interesting features of this growing disaffection is the Muslim advocacy of segregated schooling for their children. The Black Muslims operate a parochial school, the University of Islam, in Chicago, in which their children are afforded an educational environment insulated from the White community at large. The cardinal purpose of such an education is to instil in the child a "feeling of dignity and appreciation of their own kind" (p. 233). That such a sentiment should manifest itself in the Negro community is not surprising. Sufficient evidence has been forthcoming from Northern communities that minority children of high social visibility suffer serious personality disabilities in "integrated" educational situations. Goodman's studies in the Northeast indicate that Negro children in such situations evince marked out-group preferences (74 per cent), in-group antagonism (24 per cent) and manifest feelings of inferiority toward Whites (57 per cent) (*Race Awareness in Young Children,* Addison-Wesley, Cambridge, 1952, p. 62; *cf.* M. Goodman, "Evidence Concerning the Genesis of Interracial Attitudes, *American Anthropologist,* Vol. XLVIII, 1946, pp. 624-630). Hill's studies of Negroes educated in the all-Negro schools of Oklahoma, on the other hand, indicate that they are characterized by a "higher regard for Negroes," and are "more favorable in [their] expression toward [their] race" (M. Hill, "Race Attitudes in Oklahoma's All-Negro Community," *Phylon,* Vol. VII, No. 3, 1946, p. 268). Clark's studies indicate that while 80 per cent of southern Negro children from segregated schools evinced preference for brown skin color, only 20 per cent of northern Negro children, educated in integrated situations, showed a similar preference.

Negroes are apparently becoming more aware of the disabilities which attend such negative self-assessments, and the Muslim advocacy of segregated schooling and residential separation could conceivably be of considerable significance for the future of race relations in the United States. The author's qualified judgment is that "the [Negro] intelligentsia find themselves . . . powerless to move the Negro masses. . . . Their attempt to be at once Negro and non-Negro is an insoluble dilemma. To some extent it accounts for their disdain and rejection of the black nationalist movements. It also explains their failure to appreciate the as yet

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imprecise and conflicting yearnings of the Negro masses for racial definition and integrity" (p. 3). Negro nationalists have consistently held that a positive identification with "Negro-ness" is a necessary prerequisite to both personal dignity and effective social action (p. 11). To accomplish such an ethnic identification Negro residential cohesion and separate schooling for their children are considered essential. Such demands have characterized nationalist movements the world over. That such has not been the case with the American Negroes presents a number of interesting theoretical considerations. Negroes in the United States have been, by and large, xenocentric, out-group orientated. Black nationalists contend that the policy of integration fosters such orientation, an attempt on the part of particularly the Negro middle-class to lose its identity in the White community. Negro protest movements like the Black Muslims represent a half-articulate Negro demand for racial identity, a search for the psychic sense of belonging out of which a positive sense of self developes. Integration is seen as a threat to such a quest for identity (". . . integration, the most deadly and dangerous form of subjugation . . . ," "Moslems Seek Own States," *African Opinion*, Vol. V, Nos. 11 and 12, June-July 1961, p. 3).

The history of Negro Nationalism is still to be definitively written but, when it is written, references to this volume by Essien-Udom will in all probability dot its pages.

A. JAMES GREGOR.

FLOWER IN MY EAR: ARTS AND ETHOS OF IFALUK ATOLL

By Edwin Grant Burrows. University of Washington Press, Seattle, 1963. Pp. 439, 1 map, 8 plates. Price $6.75.

This book deals with the outlook on life of the Micronesians on Ifaluk Atoll in the Caroline Islands of the Pacific, as interpreted through their tattooing and decoration, and the oral arts, music, poetry, prose narrative and oratory.

The people concerned are partly or largely Polynesian, with some indication of what might be termed Malay. These intrepid seafarers live on an atoll less than one square mile in extent supporting a population of under three hundred souls.

This well written book is enlightening and vastly interesting. The translations of the songs are a credit to the late Edwin Grant Burrows, who was Professor of Anthropology at the University of Connecticut until his recent death.

MODERN ISLAM: THE SEARCH FOR CULTURAL IDENTITY

By G. E. von Grunebaum. University of California Press, Berkeley and Los Angeles: Cambridge University Press, London, 1962. Pp. 303. Price $7.50: 60s.

This is an acute study of the effect of contact with the West on Islam, and of the intellectual and psychological issues which arise. In the course of it the writer discusses nationalism and cohesive forces in the Moslems, and the relationship of one Islamic country to the other.

Dr von Grunebaum is well qualified to write on this subject, and has already written a number of works in this field. In a striking passage he quotes the philosophy which actuates some sections of Islam in relation to the West, thus (pp. 186-187): ". . . man should make use of everything created, but he should do so in the interest of the faith. The objects as such are neutral. By using them man makes them good or bad. In their

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irreligiousness the Europeans have nothing to guide their purpose, so they confuse means and ends. . . . In Europe, therefore, power and science are ever growing while ethics and religion are ever declining. This is why all its progress leads Europe nowhere but to suicide. As European civilization is corrupt in its roots, no wholesome fruit can come of it. Its dominant role is merely the consequence of the decline of Islam."

This is certainly a book with much to offer, and with much to provoke thought on the relative positions and aims of the European and Islamic worlds.

ART AND HUMAN GENETICS

By Corydon Granger Snyder. Published by the author, Chicago, 1952. Pp. 30, line drawings in text.

This book attempts to show the results in the children, so far as their features are concerned, of the mating of the spouses. The book is written from an artist's point of view and not a geneticist's, and geneticists would not always agree with what the author has to say, or they would wish to qualify his delineation of types which arise from the crossing of the particular features of interest to artists in delineating the human form. For all that it is an interesting attempt, and suggests that something worth while might well be done in this direction.

INDIAN PEOPLE IN NATAL

By Hilda Kuper. University Press, Natal, 1960. Pp. 305, 13 plates, 9 tables. Price R3.

Mrs Kuper, of the University of Natal, has made a sociological study of the Indians in Durban. It is a very interesting and valuable contemporary study of South African Indian culture.

Durban, as Dr Kuper points out in the Introduction, is characterised by its large Indian population. Of the Indian population of South Africa, 80 per cent are in Natal, of which about half are in Durban. The Indian population of Durban is increasing more rapidly than the Europeans or the Bantu (p. xiii), and this is a basis of the anti-Indian fears of the Whites.

The Indians of South Africa are mainly descendants of indentured labourers, introduced into the country to work on the estates. They have retained their religions and cultures, so that Mosques and Hindu temples exist in Durban—as indeed they do elsewhere, for instance in Pretoria, which is a long way from the sea and the main areas of Indian settlement.

The writer points out that in Durban as elsewhere in South Africa the contact between the main racial groups is restricted to business affairs. But then this could be said with even more force in India itself—where contact between Hindu and Moslem, for instance, and indeed between higher and lower Hindu castes, is equally restricted. The author states (p. xiv) that, lacking freedom to choose where to build, Indians of widely different standards often live side by side. But it seems strange to blame the legislation of South Africa for this when precisely the same conditions are to be found in every town and city in India itself, except where, as a result of change of government, Indians employed in the civil and military services—and politicians—have flowed into the areas vacated by the Europeans. Even so, because houses in such areas come to be subdivided among several families or branches of the same family, the density rate rises, and so we get a repetition to some extent of the same pattern as exists in older parts of Indian cities and towns, and as is found in those

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which never had any European population at all. One has the feeling here that the writer, without an adequate objective knowledge of the way of life in the Indian Sub-Continent, is blaming the Europeans entirely for conditions which are basic to Indian sociology. This seems to be confirmed by the fact that Mrs Kuper later admits (p. xix) that she began her field work "with little knowledge of traditional Indian culture; I was not interested in the culture of India, but of South African Indians, and only in so far as their background positively affected their present activities and outlook was that background relevant for my study." This is a very honest statement: while it explains the weakness in the argument to which we have referred, and makes its conclusions somewhat irrelevant, it is to Dr Kuper's credit that she makes it. She goes on to say that she actually found that the inherited cultural tradition was of importance.

The writer touches upon the fact that Indians have lower mortality rates, infant mortality, and so on, than the Africans and Coloureds (pp. xvi-xvii), which poses the possibility of a genetic factor.

Dr Kuper reminds us that although they comprise only 3 per cent of the population of South Africa, the Indians are derived from at least five distinct linguistic groups, Tamil and Telegu from southern India, Gujarati from the west, Hindi from central and east-central Gangetic India, and Urdu from the north. As a consequence of this there is a wide variation in religion, ranging from Hinduism, and related Jainism, to Zoroastrianism (of the Parsees, presumably, who are not Indians at all), Buddhism, Islam and Christianity. But 74 per cent of these in Durban are Hindus.

The author starts the emigration of Indians from the time of Buddha (500 B.C.). The immediate origin of the South African Indians is traced to indentured labourers brought in for the sugar planters of Natal from 1860 onwards, who came on three—and later five—year contracts.

The case histories of some of the immigrants are interesting and worth having been recorded. They show the many reasons for migration by Indians to South Africa. What is quite clear is that on the whole the immigration was mainly from the fourth, Sudra, caste, and from the so-called Scheduled Castes, who are really below the true caste (*varna*) organisation. This, as much as the disturbance due to migration, accounts for the weakening of the caste structure of the South African Hindus, because without an adequate element of the two higher castes in particular in the society there would be a greatly weakened resistance to the decay of caste. Even so, as Mrs Kuper clearly shows, the caste system, although modified and weakened by this social disturbance and also by unbalance between the various caste elements, is by no means non-existent. The writer is a little in error in supposing that a Brahmin's functions are those of a priest pure and simple, and that the person she mentions (p. 23) as having worked for his living was therefore doing something unusual. The mass of Brahmins work for their livings, but the main point is that they are compelled to maintain the traditions of Hinduism and perform certain functions which others cannot, and they devote long periods to prayer and meditation, often before departing for their daily labours from which they draw their livelihoods.

The author chides South African politicians for what she calls the "illogic of analogy" when they cite caste as a case of entrenched differences in society which denies equality. But for all that they are truly in the right. For the caste system is founded on race—the conquest first by the Dravidian Mediterraneans and later by the Sanskritic Aryans (who must have had at least some Nordic elements as these can still be traced in India). Out of these conquests, and the desire to preserve their individual and group identities, the caste system undoubtedly arose. In fact, the caste system is a form of permanent "colour" bar, sanctioned by all the forces of custom and religion, and fortified by segregated breeding and special-

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isation over millennia. The system differs from separate racial or social development along self-determinist lines because it exists in a mixed society, and segregates out each element in a different social level, making intermingling and intermarriage difficult between them. Despite anything to the contrary in the Indian Constitution, the caste system is strongly intrenched in India and, outside of the rarefied "liberal" atmosphere of places like New Delhi, it is the dominant and most important factor in the social structure of modern India. It keeps the traditional order, the separation of one caste from the other, firmly in being.

R. GAYRE OF GAYRE.

BONE, TOOTH AND HORN TOOLS OF PALAEOLITHIC MAN: AN ACCOUNT OF THE OSTEODONTOKERATIC DISCOVERIES IN PIN HOLE CAVE, DERBYSHIRE

By James W. Kitching. Manchester University Press, Manchester, 1963. Pp. 55, 5 figures, 41 plates. Price 21s.

This competently written book on the discoveries of Albert Leslie Armstrong includes a brief account of his life and work by the famous archaeologist Miles C. Burkitt. The author, from the Bernard Price Institute of Palaeontology, Witwatersrand University, has worked with Professor R. A. Dart on the question of tools of animal origin associated with *Australopithecus prometheus*. In the light of this knowledge Mr Kitching studied the Mousterian men who used Pin Hole Cave, at Creswell Crags in Derbyshire, England. He shows that many of the fragments of bone, tooth and horn fit into the pattern of primitive human cultures elsewhere, and were in fact tools. These tools of Mousterian man in Derbyshire were in advance of similar osteodontokeratic discoveries associated with the African *Australopithecines*, or with Kalkbank Man. At the level of these cave dwellers in Derbyshire, Peking Man in China and *Australopithecus* in South Africa, all three of them had a common osteodontokeratic form of civilisation—in that bones, horns and teeth formed the most ready sources of tools for men at very primitive levels.

PAPAGO INDIAN POTTERY

By Bernard L. Fontana, William J. Robinson, Charles W. Cormack and Ernest E. Leavitt, Jr. University of Washington Press, Seattle, 1962. Pp. 163, 2 tables, 129 photographs and figures. Price $5.75.

This is a thoroughly authoritative and well illustrated work on the pottery of the Papago Indians who live on the borders of Arizona and Mexico. Papago pottery shows evidence of response to the influences of non-Amerind culture, but this book is of interest not only to anthropologists, but also to those engaged in the study of ceramics and art. The authors, experts in their own fields, are from the Arizona State Museum and the University of Arizona.

IRELAND BY THE IRISH

Edited by Michael Gorman. Galley Press, London, 1963. Pp. 163, 109 plates. Price 30s.

No ethnologist can be indifferent to topographical works, for they are the background against which a racial group develops, and the topography

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in its turn is moulded in terms of the racial needs and temperament, just as much as it is an expression of the underlying geographical, climatic and economic conditions. To understand more of the Irish, to take a case in point, works such as this are for that reason useful and even necessary. Written by many distinguished writers, and covering almost every aspect of Irish life, this excellent production contains many first class photographs. The chapter by John D. Sheridan on the Irish character is particularly good. The latter half of the book is taken up by a series of essays dealing with the provinces and counties of Ireland. *Ireland by the Irish* is a highly readable book which will interest all who pick it up.

THE DIARIES OF LORD LUGARD: VOLUME IV: NIGERIA, 1894-5 AND 1898

Edited by Margery Perham and Mary Bull. Faber and Faber, London, 1963. Pp. 444, frontispiece, 5 maps. Price 50s.

Lord Lugard created for himself a great name as an administrator, and as one of anthropological knowledge and appreciation. It was to him that principles of indirect rule were attributed—which became the basis to a large extent of British colonial policy up to the time of the last war. One consequence of this was that in northern Nigeria, and elsewhere where his influence was felt, there was not the same disturbance of native life as occurred where earlier, acculturative methods were employed. It is one of the astonishing things of history that this enlightened attitude has been denied in the post-war period, and British colonial development took another road—we are inclined to believe the left-hand road—and set out to re-create in colonial territories being made independent conditions which assumed that these states should be made replicas of western democracies. Already the system is breaking down, as Ghana is making all too clear, and as other states such as Kenya, Tanganyika and Nyasaland are in danger of suggesting is possible also in their cases. Under these circumstances it is profitable to learn all we can about Lord Lugard and the methods he employed in administration.

These diaries are the records of Lord Lugard in action, and were not written by their author with a view to publication at all. The editors have done a good work of editing and in bringing out this material, which is of the greatest interest to anthropologists and historians, as well as a source of information which explains much that must be known of the background of the emergent states which have recently come to independence in the territories in which Lord Lugard laboured.

THE SOUTERRAINS OF SOUTHERN PICTLAND

By F. T. Wainwright. Routledge and Kegan Paul, London, 1963. Pp. 234, 40 plates, 61 figures. Price 35s.

The archaeological structures commonly called souterrains which are characteristic of southern Pictland (Scotland from Aberdeenshire to Fife) have long puzzled archaeologist and layman alike. Even after the intensive study of the author, there is much that still puzzles us. This account is based largely upon the excavation of two particular sites, at Ardestie and Carlungie, but it is supplemented by an extensive listing with short accounts of all the other sites between the Dee and the Forth. The author says that if we knew who the Picts really were and what were their social customs (such as regards polyandry, for instance) it would bring us one step nearer understanding the purpose of these structures. However, Professor W. J. Watson, of the Chair of Celtic, showed good reasons for believing the Picts

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were Brythonic Celts, and the distribution of Brythonic names and forms, such as the prefix Pit (Pitlochry, Pitcalzean, etc.), would all suggest that this is probably true, as otherwise to account for these forms in the Gaelic region of Scotland would be difficult. Furthermore, on ethnological grounds it is highly probable that the inhabitants of Pictland were of the same linguistic group as the peoples to their south. Finally, if there is any room for doubt it is merely that they may still have been partially pre-Celtic in speech, as it is thought were the people of Wales at the time of the Roman invasion. In other words the Celticisation had not yet been completed by that time, and so matrilineal and linguistic forms inherited from the pre-Celtic inhabitants of the British Isles still persisted to some extent. Even so, the process of acculturation to Brythonic Celtic was probably well on the way—only to give way in its turn to Goidhelic Celtic domination following the Scotic invasion of the south-western Highlands, reinforced by the spread of Christianity from Iona using the medium of Gaelic, and not Brythonic, for its religious teaching.

Anyway, whatever may be the outcome of the complex ethnological questions involved, the writer has made a very useful contribution in this archaeological study to our understanding of the material culture of the southern Pictland region.

ART IN NORTH-EAST NEW GUINEA

By Tibor Bodrogi. Publishing House of the Hungarian Academy of Sciences, Budapest, 1961. Pp. 227, 2 maps, 8 colour plates, 232 figures. Price 70s.

This book, which is in English, is written by the Director of the Ethnographical Museum of Budapest, who is widely known for works of an ethnographical character. He sets out to show that primitive art can only be understood against the whole background of the culture of the society to which it belongs. Dr Bodrogi gives, as the title informs us, a comprehensive account of the art of North-eastern New Guinea, based upon the extensive collections in his own and other museums in Europe. Useful maps showing the locations of the non-Melanesian languages in this area are included in the book.

Excellently produced and profusely illustrated, *Art in North-East New Guinea* is written by a master of his subject.

LA CONTRIBUCION DE ORTEGA A LA TEORIA SOCIOLOGICA

By Juan Carlos Agulla. Universidad Nacional, Cordoba, 1962. Pp. 64.

The author provides, within the compass of this brief brochure, a sensitive commentary to those aspects of the thought of José Ortega y Gasset relevant to sociology as a distinct discipline. As such, the essay is of considerable importance in so far as the significance of Ortega is rarely appreciated in the non-Latin world. Ortega is, in principle, a philosopher, but he is a social and political philosopher and his work can function as a propaedeutic to sociology as an empirical enterprise. He provides the theoretic instruments for the analysis of the social circumstances in which man finds himself cast (*cf.* pp. 44 f.), conceptual schema in which the micro-distinctions of empirical sociology become significant. The analysis of man as a function of his interrelations with things and other selves, the relationship between the Self and other selves in primary and secondary reference groups, the distinction between interpersonal intercourse and social custom and usage, the dialectic of folkways and stateways,

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all familiar in a fragmentary fashion in the professional literature of sociology, are woven in the works of Ortega into the fiber of a general theory of man and society.

The author indicates that the conceptions entertained by Ortega bear a family resemblance to the theories of G. Mosca and V. Pareto (pp. 50, 51, 58), also of Mediterranean provenience. He might equally well have indicated that Ortega's philosophy, in form, content and expression, shares generic similarities with that of Giovanni Gentile (particularly his *Genesi e struttura della società*).

This is not to say that parallels to the thought of Ortega are not to be found in Anglo-American literature. There is something of Ortega in G. H. Mead and B. Bosanquet. But the emphasis upon the social function, the historic universality, and the intrinsic cultural and social value of élitism, of hierarchy, seems uniquely Mediterranean (pp. 49-64). The dynamic rôle of "myth," the passive, imitative and compliant mass, the creative and directive function of a select minority, all hark back to Plato and have found political and religious expression in the authoritarianisms that have clustered around the Mediterranean basin (José Antonio, founder of Spanish Falangism, was an enthusiastic student of Ortega—*cf.* S. Payne, *Falange: A History of Spanish Fascism,* pp. 29, 43).

Juan Carlos Agulla has provided a discerning and scholarly account of the sociological import of the work of Ortega y Gasset, and his brochure recommends itself to all those who aspire to some familiarity with an all too frequently neglected component of the rich intellectual heritage of Europe.

A. JAMES GREGOR.

CASTE IN MODERN INDIA AND OTHER ESSAYS

By M. N. Srinivas. Asia Publishing House, London, 1962. Pp. 171. Price 30s.

Professor Srinivas, who is Professor of Sociology in the University of Delhi, has produced in this book of essays one of particular importance dealing with *varna* and caste. To anthropologists it has always been self-evident that there is a relationship between race and caste. For not only does the Indian population in all castes get darker as one passes from north to south, but in any single part of India as one progresses from the higher castes to the lower ones the darker is the complexion that one finds. Despite this being so, and despite the obvious explanation, there has been a constant effort in more recent times to show that caste was not in the past, and is not now, connected with a racial stratification of the Indian population. Therefore, the clear reasoning of Professor Srinivas in this essay is to be welcomed.

He shows that in the *Rig-Veda* the term *varna* was used for the Aryan *varna* as distinct from the Dasyu *varna,* the aboriginal (and as we know darker) peoples of India, who were conquered by the invaders. In the *Rig-Veda* there are three orders of Aryan society which are termed Brahma, Ksnatriya and Vish—that is the forerunners of what later became the Brahmin (priest and scholar) group, the soldier and ruler one, and the merchant division of society. The word *varna* meant colour, and the Aryan colour (that is white or light coloured peoples) had these three divisions, whereas the Dasyu colour was different, and darker.

Later this word *varna* came to be used for what we now call caste: and so instead of its being conceived as a word which could be used collectively for the colour of all the Aryan castes, it came to mean each one individually. But so strongly was the sense of colour involved that by this stage different colours were used for the four castes (which Hindu caste society had by this time come to possess) to distinguish them.

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By this time there had been added to the three original Aryan castes that of the Sudras, or peasants and servants. The first three, however, always remained distinct from them since these three were the Twice-Born, who wore the sacred thread which was denied to the fourth caste.

As time passed and the aboriginals became acculturated to Hindu society the Untouchables and similar groups arose. They are outside the Hindu social structure, and are plainly derived from the very dark aboriginals of India.

Later this system became thoroughly complex, and today, for instance, tribes such as the Gonds, who are aboriginals, claim to be Kshatriyas—just, it is suggested, on the score of having had a successfully developed state in central India. In this case, however, this is not the whole story, for the ruling family and its relations, who call themselves Rajputs, are fair complexioned, while the masses of the Gonds are not. Under such circumstances it looks as though the tribes concerned have abrogated to themselves the caste of their rulers. We are fully in agreement with Professor Srinivas that caste is highly complex, and it is not possible today to fit the hundreds of castes as they appear in local areas all over India into the exact four caste model. But, nevertheless, these castes refer back to it, and some rational explanation may be seen in terms of the *varna* system as to why the caste in question does not fit into that system, as we have indicated in this example of the Gonds.

One thing is certain: in any locality, with few exceptions, the higher castes (the Twice-Born for instance) show less aboriginal features than the others, and so despite the complexities, the cross-currents and the movement by false claims into certain classifications by parvenus claiming to be what they are not, the overall ethnological differences can still be perceived. Professor Srinivas has performed a useful service in expounding the complexities of this subject.

THE GREATNESS THAT WAS BABYLON: A SKETCH OF THE ANCIENT CIVILIZATION OF THE TIGRIS-EUPHRATES VALLEY

By H. W. F. Saggs. Sidgwick and Jackson, London, 1962. Pp. 562, 2 colour plates, 64 half-tone plates, line drawings in text. Price 63s.

This is quite a profound but very readable book by Dr Saggs, Reader in Akkadian at the School of Oriental and African Studies at London University. In Part 1 it covers the general and political history from before 2000 B.C. in Mesopotamia, 2000 to 1350 B.C. in Babylonia and Assyria, followed by a study of the rise and supremacy of Imperial Assyria and the Neo-Babylonian Empire. Part 2 surveys the social and cultural history, dealing with the foundations of Babylonian society, its law, statecraft, administration, trade, economics, religion, literature, mathematics and astronomy, medicine, chemical technology and art, and ends with a chapter on "Legacy and Survival." The book contains an extensive bibliography, chronological tables, a subject index, indices of proper names, Biblical references, and of Sumerian, Akkadian, Hebrew and Greek words.

Following the current trend, this book has the major failing that it not merely plays down but practically ignores racial factors. Indeed the writer does this consciously, as he says (p. 161): "Whilst most scholars now accept that it is wrong to attempt to see third millennium history in terms of a racial struggle between Sumerians and Semites, it does seem to be true that Semitic infiltration introduced ideas in conflict with the basic conceptions of Sumerian society. . . ." The scholars to whom he refers probably know little of racial matters in the first place, and secondly the fact that they deliberately attempt to eradicate the racial factor indicates how wrong they are when the facts are really perceived. For the Sumerians

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not only were not Semitic speaking, but they had a racial character which was basically Armenoid, as the illustrations of them make quite clear, whereas the Semites were either Semitised northerners—such as many of the Assyrians and the Khassites and Mitannians, who were of northern origin with Nordic connections and often of Aryan tongue—or true Semitic eastern Mediterraneans. The whole question is in fact one which cannot be evaluated and understood except in that light. Judging by the statement which we have quoted, Dr Saggs quite clearly perceives that there is a racial factor here, but finds it necessary, presumably so as not to step too far out of line, to put in the qualification that most scholars think it is wrong to attempt to see third millennium history in terms of a racial struggle.

On the pages following (particularly on p. 163) we get references from the Babylonian documents themselves to the "Black-headed Ones," which was their way of describing themselves. Such a term cannot be understood except in a racial context. The Sumerian myth from which it is taken not only designates the Sumerians by a physical anthropological description (that of hair colour) but raises problems at once. For the Semites were also black-headed, and so it is clear that this term arose as a distinction from non-blackheaded stocks. Quite clearly, therefore, it has a reference to that part of the racial history in which the Armenoid or Armeno-East Mediterranean Sumerians were in contact with the racial stocks to the north, who stretched in a wide arc from Iran to Anatolia, whose speech was Aryan and whose racial type was more Nordic than anything else, among whom brown to golden hair would be normal.

On page 194 we have an account of the treatment of animals in early Babylonian society, which was not characterised by humanity in many instances. But Dr Saggs mentions that the horse generally was treated with honour, and that it came into its own with the Cassites (p. 195). But here, again, we touch upon the whole of this racial question. For the Cassites, in common with all the peoples from the northern peripheral regions, had Aryan antecedents and Nordic racial strains. and it is to these people that the use of the horse for transport and cavalry goes back—for it was the horse, apart from the character of the Aryan peoples themselves, which led to the vast movements of the Indo-Europeans and their rapid expansion.

It is not fortuitous that Dr Saggs reports (p. 175) that after the Cassite period fish eating became less common, to judge by the texts, while in Syria in the first millennium B.C. there was a taboo on eating fish. This can be better understood if we realise that the Aryans in general were not used to fish eating, and their influence seems to have brought about a decline in the custom in several places. Thus the most ancient Greeks referred with contempt to foreigners by the term "fish-eaters;" the Anglo-Saxons, although living close to the sea and derived from a people across the sea, had to be taught the value of fish eating by St Wilfred. In other words a trend which the Indo-Euporeans seem to have developed against the eating of fish (because they originally came out of the steppelands of Inner Eurasia and had little or no contact with the sea) was, ultimately, reversed by Christianity.

Sufficient has been said to show that racial phenomena cannot be ignored if one is to understand the growth and development of peoples and civilisations In so far as our contemporaries do so, and it seems that it is often a deliberate act, then the interpretations of facts must be by that amount defective, and we shall have to wait for a later age, when more objectivity can be brought to these studies, to give a wholly objective and balanced account of the growth of civilisations and nationalities. Having said that, we are not suggesting that this is not a good book. On the contrary it is a valuable contribution to our field of studies, and we are all indebted to Dr Saggs for his painstaking and interesting work.

R. GAYRE OF GAYRE.

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FOLK TALES OF PAKISTAN

Compiled by Zainab Ghulam Abbas. Pakistan Publications, Karachi, 1960. Pp. 136, line drawings in text. Price Rs. 2.

Folktales are always of ethnological interest, and so these are not without their value, quite apart from any literary contribution which they may make. In the Story of Heer, for instance, her lover Ranjha had golden hair—a matter of no surprise, when we know that there are Nordic elements still in north-west India—and this tale appears to have Baluchistan associations—which were even more pronounced in ancient times than now. Curiously enough, in this story, the heroine is referred to as a Rajput, and there is a reference to caste, so there is a Hindu association involved—but, even so, the Rajputs were the soldier-caste of the Hindu Aryans, themselves a northern people. Unlike the work of modern writers, who seem to consider anything good in a man is from his education or environment, these tales are sufficiently true to the whole experience of intellectual man that they do not hesitate to attribute a man's good qualities and nobility of character to his heredity Thus, in the tale of Adam and Durkhane we read: "The young man was both handsome and intelligent, and had in his blood all the fine characteristics of his forefathers." If any modern English-speaking novelist started off in that vein he would be put down as a "fascist" at once—although it was once, even with us, a basic ingredient at the beginning of any account of the hero in our novels.

One strange feature of all these tales, unlike the northern European ones which end happily with the marriage of the lovers, these end tragically—which seems to show that a distinct temperamental characteristic is involved.

THE BEGINNINGS OF CHINESE CIVILIZATION: THREE LECTURES ILLUSTRATED WITH FINDS AT ANYANG

By Li Chi. University of Washington Press, Seattle, 1957. Pp. 123, 50 plates, 9 figures, 4 tables, 1 map. Price $6.50.

Dr Li Chi is to be congratulated on a really first class exposition of his subject, which provides food for thought on many of the problems affecting not only Chinese origins but human origins in general. In citing Hooton's view that Pekin Man had probably Australoid connections, Dr Li Chi has performed a service, since at the same time he has drawn attention to the evidence of ancient Chinese literature of the former existence of hairy men in China—presumably pre-Mongoloid. These link with the existence of the same type in Japan, the Ainu. There seems very little doubt that a strong case can be made out for a spread of an Australoid like stock throughout eastern Asia, which ultimately survived only in the Ainu in Asia, while the main branch travelled southward and in time reached Australia. The evolution of the Chinese themselves is still a mystery, but it is obvious that its solution must be sought elsewhere; nevertheless there is evidence, as the author points out, for a Negroid or Negrito element in the South of China at one time, before the settlement of the whole area by the Mongoloid Chinese types.

Dr Li Chi's reference to the conclusive Chinese character of shovel-shaped incisor teeth is important. Their occurrence in Pekin Man may, of course, be coincidental, or derived from crossing with another unknown line, or it may be due to crossing with a proto-Mongoloid strain. It does not necessarily make Pekin Man the ancestor of the Chinese proper.

The author shows that the foundations of the Neolithic to Bronze Age

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Shang dynasty had many elements in it, some of which show western contact and point to some influence from Mesopotamia.

Dr Chi Li has had a distinguished career as a scholar of Chinese anthropology and archaeology. He is the Head of the Department of Anthropology and Archaeology at the National Taiwan University, and editor of such important journals as *Archaeologia Sinica, The Chinese Journal of Archaeology,* and the *Bulletin* of his department at the University of Taiwan.

R. GAYRE OF GAYRE.

EDUCATION AND ATTITUDE CHANGE: THE EFFECT OF SCHOOLING ON PREJUDICE AGAINST MINORITY GROUPS

By Charles H. Stember. Institute of Human Relations Press, New York, 1961. Pp. 182. Price $4.00.

Many claims have been entered in the name of education. Among the ills education was to cure was racial and minority prejudice. Originally the sanguine expectation was bruited with the pronouncement that "prejudice is the fruit of ignorance and is subject to the healing influences of education in the broadest sense of the term" (*New York State Temporary Commission Against Discrimination,* Legislative Document, 1945). The data, however, was not conclusive. Nonetheless Professor Gordon Allport could still contend, years later: "We conclude, therefore, that general education does to an appreciable degree help raise the level of tolerance, and that the gain apparently is passed along to the next generation" (G. W. Allport, *The Nature of Prejudice,* Doubleday, Garden City, 1958, p. 406).

Professor Stember's book is the first attempt to undertake a definitive appraisal of available findings to determine the efficacy of education in reducing "prejudice." He has reported his findings with admirable candor. "Most research," Professor Stember concludes, "suggested that the educated were less prejudiced. The present study finds no such clearcut relationship; on many issues the educated show as much prejudice as the less educated, and on some issues they show more. . . . The educated are *more likely* to hold certain highly charged and derogatory stereotypes; favor *informal* discrimination in some areas of behavior; reject *intimate* contacts with minority-group members (p. 168). . . . As we go up the educational ladder, old images of minorities are replaced by new ones, often no less harmful. Covert discrimination continues to be acceptable and, most important perhaps, the desire to keep minorities at some social distance remains (p. 171). . . . The influence of education is more superficial than profound—reaching most strongly those aspects of prejudice which are least entrenched in the normative system (p. 173). . . . Merely raising the educational level will not necessarily reduce prejudice against minorities . . . the data suggest that the effects are minimal" (p. 180).

P. R. Hofstaetter, in his "A Factorial Study of Cultural Patterns in the U.S." (*Journal of Psychology,* Vol. XXXII, 1951, p. 105) written over a decade ago, had contended that "neither better and more widespread education nor a rise in the standard of living affect racial discrimination directly. Racial discrimination . . . is a function of the relative frequency of the element discriminated against." Professor Stember's study corroborates the former judgment.

The fact that social psychologists have so badly misjudged the efficacy of education, fostering social programs which rested for their ultimate effectiveness on the realization of unrealistic expectations, indicates, at least, serious shortcomings in the theoretical assumptions basic to attitude research and/or methodological disabilities of serious consequence. One of the tacit theoretical assumptions of most "action researchers" has been

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that in-group preference and out-group avoidance is, in essence, abnormal and unnatural, the consequence, somehow, of deprivation in infancy and childhood. Yet the universality of this trait complex, the attraction of similars and the repulsion of dissimilars, argues against such a theoretical posture.

More important for our consideration here is the suggestion, made by our author, that the White decision to withdraw acceptance of school integration when the possibility of a Negro majority is posed "is not a measure of prejudice in the ordinary sense" (*cf.* pp. 176 f.). It is necessary to seek out the implications of this suggestion.

Very frequently tests of "prejudice" traffic on the assumption that the respondent is "prejudiced" if he harbors opinions which would lead him to decide, for example, to withdraw his children from a school in which the incidence of Negro attendance exceeded a certain critical level. *The assumption could only be supported by evidence which indicated that the increased incidence of non-Whites in a school situation does not adversely affect the academic standards of the subject school.* The evidence, however, indicates that academic standards *are* adversely affected, hence the disposition to evacuate one's child is not evidence of "prejudice in the ordinary sense," but a reasoned reality assessment (*cf.* E. P. Wolf, "The Invasion-Succession Sequence as a Self-Fulfilling Prophecy," *Journal of Social Issues,* Vol. XIII, No. 4, 1957). Similarly questions which solicit responses with respect to residential segregation, minority traits, and the techniques for resolving intergroup tensions could only serve as indices to prejudice if all those questions had definitive answers, that is to say, only if it could be conclusively shown that the disposition to live amongst one's own racial, ethnic, economic or religious group, the ascription of certain traits to some identifiable minority group, and so forth, were totally unsupported by reason or fact. It is certainly conceivable, however, that there are significant and cogent reasons for wishing to maintain the homogeneity of one's residential community, and that there are certain traits more commonly manifested by specific groups (in which case skin color, speech, modes of dress and so forth can serve as reasonable indices to such traits—there is a higher probability that individuals of a certain skin color, mode of speech or attire will be possessed of such traits since such traits characterize the group as a whole).

It is evident that as long as such theoretical and procedural impairments afflict attitude research it will deliver little of substance. Any social policies formulated, even in part, with an eye to such findings will tend to be ill contrived, threatening more ill than succor to those they are designed to assist.

This volume is a responsible and carefully documented account of the passing of a systematic delusion which, for too long a time, has beset "action research" in the United States of America.

A. JAMES GREGOR.

NAMES AND PLACES

By G. J. Copley. Phoenix House, London, 1963. Pp. 226. Price 16s.

This is a very good work on English place-names and, particularly, on some of the ethnological problems involved in the settlement of England. For example, it is usual to think of Angles, Saxons and Jutes as the main Teutonic settlers, although from archaeological material we have known for some time now that other German tribes were involved. Mr Copley produces evidence of the settlement, for instance, of Swabians, as well as Vandals, in various parts of England, and he deals with the enclaves of Britons and Welsh who survived in England after the conquest and were gradually absorbed into the evolving English nation.

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In another chapter he deals with place-names indicative of the pre-Christian gods and their religion: place-names such as Tewin, Tuesley and Twiscomb are all derived from the Germanic god of war named Tiw. Woden has left his mark in the names Wednesbury and Wednesfield, while Thunor, the Germanic Jupiter, is commemorated by such places as Thunderley and Thursley. But it is curious to find he was not sufficiently regarded to have left his name in any place except within Saxon England. The Angles must not have had much use for him—and he is thought to have been a god of much less status than Tiw, the war god after whom Tuesday is named.

The book is constructed on an ethnological basis and in addition contains a most useful short dictionary of common or well-known place-names, as well as a glossary and an index. It is highly recommended as a reference work on any ethnologist's or anthropologist's bookshelf, and it will also be of great interest to the student of history, literature or topography, and to the general reader as well.

GREAT BRITAIN: Geographical Essays

Edited by Jean Mitchell. Cambridge University Press, Cambridge, 1962. Pp. 612, 87 figures. Price 42s.

This is a volume of essays covering the geography of Great Britain by some of the leading geographers in this field, and so is a valuable contribution to the geographical background upon which the racial, social, historical, cultural and economic developments have occurred.

The only criticism that one would level at the work is that the amount of space given to Scotland, about one hundred pages out of the whole, is inadequate considering the relative size of that country to the rest of Britain, and the much greater complexity of its geographical and geological formations. Professor Ronald Miller has an essay on the Lowlands of Scotland which is both useful and interesting, but one must dissent from his statement (p. 489) that with the Union with England in 1707 Scotland entered more fully into the community of Europe than has Ireland, if by this statement it is meant that Scotland improved its relations with the continent compared with those which subsisted beforehand. This is quite untrue. Scotland was a part of Europe before the Union, as all historical, genealogical and other information makes clear, and it went in fact into isolationism from Europe by its Union with England, since the English state has always been highly egocentric—so that "Niggers started at Calais" for many English people, and London was the centre of the Universe! It is even arguable that continental influence was stronger in Ireland than in England—as is witnessed by the settlement of numerous Irish families in Spain, Austria, France and elsewhere, and the returning influences which this involved. Generally speaking the English did not settle on the continent, and one reason was that they had much less intimate relationships with it. The same thing can be said of the English in relation to the Scots. Thus there is only about one well known case of a family of English descent (Fleetwood) in the nobility of Sweden, whereas there are literally dozens from Scotland—Ferson (Macpherson), Kalmers (Chambers), Douglas, Hamilton, Spaldingkreutz (Spalding), and so on. The same thing is true of Scottish settlement in France as compared with English. If we take the architecture of Scotland, it is French; and the Lowland Scots tongue has many French loan-words, such as ashet (from *assiette*, a dish), tassie (*tasse*, a cup), bonnie (*bon*), and so on, all brought in because of the Auld Alliance with France, under which every Scot was a citizen of France, and every Frenchman of Scotland, up to the Union of 1707.

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Professor Miller's statement (also on page 489) that Scotland was a melting pot of Scot, Briton, Anglo-Saxon and Norse, as well as the indigenous "painted ones," is also something which can give misleading impressions, even if it is not actually incorrect. The concept of the melting pot suggests racial mixture, whereas the terms he uses throughout are solely cultural ones—and in fact all the ethnic names he uses cover peoples who had one thing in common, and that was their Nordic ancestry, whatever else they had in that ancestry. Therefore, this was only a cultural melting pot, and not much at that, since the cultures were all Aryan, and Scot and Briton were Celts in any case, and Anglo-Saxon and Norse were Gothonic or Teutonic. We assume that the "painted ones" refers to the Picts, but they were Brythons—the very Britons he mentions —and not a separate stock.

These are small points which we have picked; they do not invalidate either Professor Miller's essay, which is well worth while, or any of the others, but they do suggest that there is a need to qualify the statements made. Professor Andrew C. O'Dell's essay on Orkney and the Shetland Islands brings together a useful presentation of the character of these less than well known islands. The essay by J. W. Birch on the Isle of Man is also a very good presentation of his subject. Professor M. J. Wise's account of the London Region is particularly helpful at the present time when we are grappling with the demographic and sociological problems presented by the quite unnatural and dangerous sprawl of London over the whole face of south-eastern England, which is not only destroying the character of adjacent areas but is highly injurious to the rest of England by sucking away from them their industries and populations, leaving semi-derelict areas in the external regions from London, in such as north-eastern England, Cornwall, and elsewhere, and creating a great semi-slum industrial region of London.

In mentioning these writers only we do not infer that theirs are the only worth while contributions—the book is good throughout.

AN ALBUM OF MAYA ARCHITECTURE

By Tatiana Proskouriakoff. University of Oklahoma Press, Norman, 1963. Pp. 142, many illustrations. Price $7.95.

The peninsula between the Gulf of Mexico and the Carribean is the region in which 1200 years ago the Mayas erected a great civilisation which had already broken up and decayed before what was left of it met its doom as the Spanish conquest swept over the region. Since then the natural and fast growing forests have hidden it in their vastnesses. Only in the last century were the architectural remains of this civilisation discovered by travellers and archaeologists, and since then much work has been done upon them. They have in many cases been not only excavated but also restored.

This excellently produced work by Miss Proskouriakoff, an archaeologist at the Carnegie Institution in Washington, and research fellow of the Peabody Museum at Harvard University, shows illustrations of these remains in their restored, or reconstructed form, and facing them on each opposing page is a description in the text.

It is clear that the surviving Maya in the remoter villages live much as their ancestors did—but what has become of the intellectual and learership classes is a mystery. The peasant farmers existed then and now, but they did not build these great edifices with their complex carvings, the work of an advanced civilisation.

The author is very right when she writes (p. xiv):

It is somewhat disturbing to our complacent faith in constant pro-

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gress to realise that the higher elements of a culture can be so evanescent and that they can so completely disappear, leaving intact only a bare foundation of traits essential for getting a living. Undoubtedly the weakness of Maya civilization lay in its spirituality and in the fact that its higher intellectual activities, finding no directly practical application, were bound up with the destiny of a numerically insignificant group of theocrats, artists, and scholars, whose extinction at a stroke reduced life to a very primitive level. The cities served not as foci of industry but as centers to provide the ruling caste with opportunities for theological and scientific discourse, for the elaboration of architectural and sculptural art, and for the development of gorgeous religious ritual. They were not really essential to the life of the masses, and it can well be imagined that with the still unexplained passing of the class that created them, they were rapidly abandoned.

These words are very true, and it cannot be too strongly emphasised that civilisation, and continued advancement in civilisation, depends on a relatively small number of gifted and cultured people, and not on the masses. In this age of the "common man" and the egalitarian heresy this might well be remembered. The population explosion which is now occurring at the base of the social pyramid—with, in all too many cases, an accompanying shrinkage in the reproduction rates of the more gifted classes—may well be projecting a similar decay of our modern civilisation in the way that the Maya and others went in their day. There is much food for thought in a consideration of this extinct civilisation.

OUR CROWDED PLANET: ESSAYS ON THE PRESSURES OF POPULATION

Edited by Fairfield Osborn. George Allen and Unwin, London, 1963. Pp. 192. Price 21s.

Among the contributors to this collection of essays is the late Sir Charles G. Darwin, well known to readers of THE MANKIND QUARTERLY for his brilliant essay on world population. The editor, Dr Fairfield Osborn, rightly says (p. 9):

> The inordinately rapid increase of populations in this world is the most essential problem that faces *everybody everywhere*. Slowly, all too slowly, we are learning that the pervasive and complex effects of ever increasing numbers of people are almost invariably harmful. The results of population pressures are not merely physical, such as the daily crisis of starvation facing hundreds of millions of people; they generate as well a host of other undesirable conditions in human life affecting not only the happiness and conduct of the individual but involving also basic questions of economics, religion, forms of government, and, finally, the ultimate dilemma of war or peace.

Dr Osborn refers to the position of the Roman Catholic Church on the question of birth control and the argument that it is contrary to natural law. He makes the interesting point that what is forgotten is that through the advance of medical science "death control" has occurred, and this is totally *unnatural*. This death control has to a large degree eliminated the normal processes of nature that kept the birth and death rates in balance.

In his essay "Man as a Member of a Biological Community," Professor Marston Bates—Professor of Zoology, University of Michigan—has a forceful analogy to retail on the excessive rate of population growth from the bronze age onwards. He says (pp. 21-22):

> Post-Neolithic man, with the development of agriculture and a

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whole series of other technologies, has been able to escape the biological controls that ordinarily work to maintain balance within the community. The late Alan Gregg, of the medical division of the Rockefeller Foundation, compared this human growth with the wild growth of cancer cells within an individual organism. The analogy has frightening parallels. It can be argued that man at the moment is doing all right (though I think few people are really happy about the present human condition). But if you could ask individual cancer cells growing in an organism, they would probably also think they were doing fine, not caring and not realizing that in their wild growth they were destroying the organism and thus inevitably also destroying themselves.

Professor Marston is undoubtedly right when he says (p. 24):

> No one, certainly, would advocate going back to the "natural" state of the Stone Age, but, equally, no one can view the brave new world toward which we are heading with much enthusiasm. Francis Bacon long ago observed that "we cannot command nature without obeying her" and in the arrogance of our present success in command, we forget that obedience may also be required for survival. As Charles Elton has remarked, "Unless one merely thinks man was intended to be an all-conquering and sterilizing power in the world, there must be some general basis for understanding what it is best to do. This means looking for some wise principle of coexistence between man and nature, even if it be a modified kind of man and a modified kind of nature." And one necessary modification of man, surely, is some curbing, some balance, some intelligent adaptation, of his present cancer-like spree of reproduction.

The late Sir Charles Darwin, former Tait Professor of Natural Philosophy at Edinburgh, points out (pp. 30-31) that for the past two centuries man has succeeded in some countries in avoiding the main consequences of natural selection. As he says, "anyone can survive without having to undergo the stringent test of the struggle for life." He points out that "it is questionable whether it will not carry the consequence of a gradual degeneration in human qualities in the long run through the preservation of all the inferior mutations in man's genetic equipment. Such mutations are constantly occurring in the case of man as well as of all animals, and in the past it has been through their perpetual elimination in the stringent struggle for life that the marvels of evolution have occurred." He then goes on to ask if, since mankind can now survive without the test of the struggle for existence, it will help if we limit his numbers, for we should still have to face a slow degeneration in the qualities of the human race.

In the conclusion of his essay Sir Charles says that he has tried to set out the problems facing us

> if we are to achieve a continuation of human living in the manner that we would most certainly wish for. In every way let us strive to accomplish this, but the prospects do not seem to be very good, and as a personal opinion it seems to me unlikely that we shall succeed in continuing our present conditions of life over any long period. To judge by many authors this would seem to be regarded as the end of any world worth thinking about, but I do not agree. From the writings of the past, when natural selection was in full operation, man appears to have been as happy as he is now, and I see no reason to think that in the future, when the struggle for life again becomes severe, the human race will lose happiness, even if they do look back with regret to the passing of the golden age in which we are now living.

In the second part of the book, which deals with population pressures on economic and political trends, there is all too often a lack of realisation,

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or actual avoidance, of the logic of the biological arguments propounded in Part I, from some of which we have already quoted. It is not true that poverty necessarily produces wars. Certainly where it does they tend to be on a much less formidable and shattering scale than where the wars are the creation of advanced powers with high standards of living well above the subsistence level. Neither is it true that new generations are born at an awesome rate in China because of terrible adversity (Mr Grenville Clark, p. 105). Victorian England also had an awesome rate of reproduction in a comparatively prosperous situation of industrial development, and the same thing is true of America today. What is not understood here is the removal in some measure of death control, which has caused the rate of Chinese reproduction to accelerate.

Professor Arnold J. Toynbee states what needs to be said time and again when the optimists come forward with their arguments that the world has ever increasing capacity for enlarging the food supply to meet man's needs. He says (p. 113):

> "Let the population soar," they say. "Science will be able to provide food for any conceivable increase in the number of human mouths to be fed." This cannot be true, for the human race, like every other species of living creature, will increase its numbers *ad infinitum* unless and until the increase is artificially checked. On the other hand, there must be a limit to the increase in the supply of food for human consumption, even if science is allowed to do its utmost. Therefore, sooner or later, when science has done all that it can do, the unlimited tendency of population to increase will necessarily be curbed. The only open question is regarding the way in which this inevitable limitation is going to be brought about.

These quotations will serve to indicate that this is a book of vital interest to all of us today.

R. GAYRE OF GAYRE.

NAVAHOS HAVE FIVE FINGERS

By T. D. Allen. University of Oklahoma Press, Norman, 1963. Pp. 249, 12 plates, 1 map. Price $4.95.

This book is written by a man and his wife (under the collective name of T. D. Allen) who had taken over the temporary care of the Ganado Mission station in 1955. An understanding account of the Navaho Indians, well written and easily read, it will be of interest to all who like books on American Indians. Like everyone in their situation, Don and Terry Allen became involved in first aid and other work, and general administration of social services for the Amerindians in their neighbourhood. They give a good account of dealing with the sick, and the work of the witch doctors, whom they say are capable of healing by "singing" over the patients when the illness is of a pyschosomatic character, but they fail in other cases such as pneumonia. One of the illustrations shows the high standard of craft and artistry to which the Navahos rise in the weaving of large rugs or carpets. Other plates in this interesting book indicate the barren and arid nature of the Navaho homeland.

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